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FORMERLY

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VOL. CVIII., No. 22
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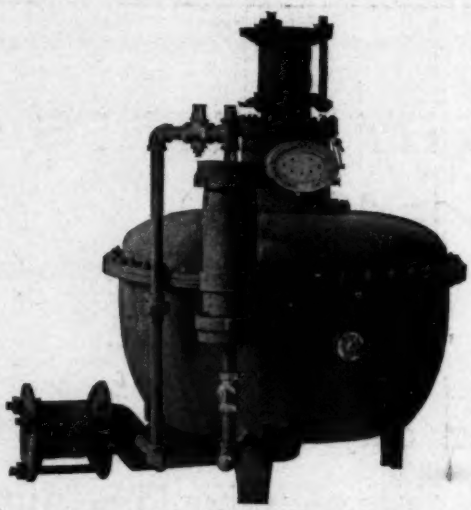
Since We Started to Fight

the price of coal; the higher wage scale; the freight congestion have all played their part in making the production of artificial gas an increasingly costly proposition, and the *sale of gas in large quantities* to manufacturers, and industrial plants, has called for the installation of meters of large capacity and guaranteed accuracy, at both minimum and maximum volume.



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Improved Positive Gas Meters

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Gas as a Fuel Has Alluring Advantages to the Maker of Asphalt Roofing Material and Shingles

The Same Economies Can be Affected in All Operations Requiring Asphalt Melting—Various Uses to Which the Product is Put—Increased Demand for Asphalt Shingles

By C. H. KALLSTEDT

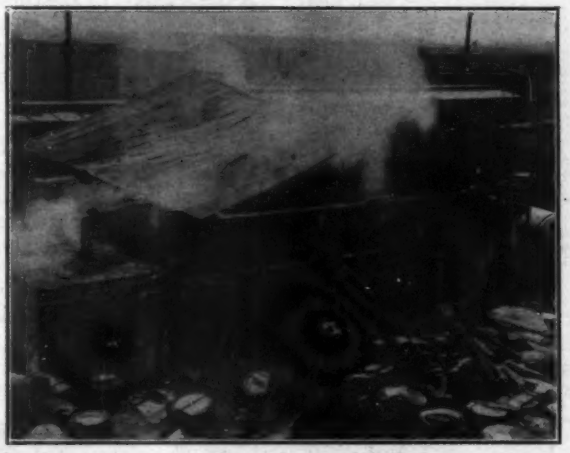
Industrial Gas Salesman, Public Service Company of Northern Illinois, Chicago

Gas as a heat medium is not a new discovery, but the numerous new uses to which it has, in the last few years, been applied, leaves the field open for an unusual amount of experimental work, development and progress.

Among the most interesting of the recent experiments and the most extraordinary successes is the application of gas in asphalt melting.

Asphalt melting is a far more important industrial enterprise than is generally recognized. Asphalt is obtained from bituminous sandstone and limestone, frequently, too, it is found where rock oil occurs, in which cases it is produced by the drying up of the petroleum. In all instances it must, however, be heated before it can be used.

The numerous modern applications and singularly varied uses to which it can be put, and the general necessity for asphalt as an ingredient in the manufacture of ordinary products is not commonly known.



Original stills with a new small superheater. These stills were oil heated, a combustion chamber was changed and gas has been used as a fuel for more than a year. Tanks are 15 ft. long and 5½ ft. in diameter. Superheater, 11 ft. long and 4½ ft. in diameter. Maximum gas consumption under each, 1,200 cu. ft. per hour.

COMBUSTION CHAMBER, SHOWING ARRANGEMENT OF FIREBRICKS TO SUPPORT BAFFLES AND BURNERS

Wide Variety of Uses

It is an ingredient in Japan varnish, is used in the construction of water pipes, in the manufacture of auto tires, all kinds of rubber goods, is used for cisterns, etc., but it is most commonly and to the greatest extent used in the construction of pavements.

Another use of asphalt, second in importance only to pavement, is its use in the manufacture of roofing materials and shingles.

Now, then, since the value and usefulness of asphalt covers so wide a range, the melting of asphalt, a neces-

TWO NEW STILLS RECENTLY CONSTRUCTED, 20 FT. LONG AND 6 FT. IN DIAMETER, SHOWING GAS AND AIR CONNECTIONS

sary process in the manufacture of any articles in which asphalt is contained, assumes corresponding importance. That this process may be consummated in the quickest, most efficient and economical manner possible is a fundamental requisite.

That gas as a heat medium is the solution of the problem, I can best illustrate by the results obtained in an asphalt shingle company, in which an installation of gas, about a year ago, has proven highly satisfactory.

Increasing Demand

The exceedingly high price of wooden and tile shingles has made the demand for asphalt shingles increase to such an extent that asphalt shingle and roofing companies are operating day and night to fill their contracts. The United States Government, too, has let contracts for thousands of rolls of roofing and squares of shingles to be used at various military cantonments in this country and abroad.

Naturally, any improvement in methods of operation, which enables the companies to increase their output without an appreciable increase of expense, is a desirable proposition.

A GASTEAM RADIATOR IN ONE OF THE OFFICES—GASTEAM RADIATORS ARE USED TO HEAT ENTIRE OFFICE

Asphalt is, of course, a very important factor in the manufacture of these shingles and roofing. The felt paper of which the shingle or roofing is made is of various grades and thicknesses. This determines the quality of the finished product. In the several different processes this paper is put through before ready for shipment three tanks or stills are used. Two are 15 ft. long and 5½ ft. in diameter, and a third 11 ft. long and 4½ ft. in diameter. One of the large and one of the smaller tanks are used as saturation stills, while the other large tank serves as a coating still.

The asphalt in the saturation stills contains fluxes, and a great amount of saturant is necessary with a comparatively small amount of coating. Higher temperatures can be maintained by using two saturation stills.

Pipe Burners Under Stills

The paper is first saturated in a tank at a temperature of 400 to 450 deg. Fahr. This nearly burns the paper, but the advantages of the high temperatures are that oils contained in the asphalt are broken up at this temperature, while they would not be disturbed at a lower

A PART OF THE OFFICE, SHOWING GAS ARC—GAS BEING USED FOR LIGHTING THROUGHOUT THE OFFICES

one, and besides the felt can be saturated much more quickly in this manner. When thoroughly saturated, the paper is coated with asphalt which is at a temperature of from 300 to 400 deg. Fahr., after which the grit stone or whatever desired is put on.

Under each of the stills pipe burners are used with special type blast heads, so that a maximum of 1,200 cu. ft. per hour is possible. A long baffle plate is placed about 6 to 8 in. above the burner heads and about 6 in. below the bottom of the tank. This tends to distribute the heat and protects the tank from injury. The flues are arranged so that as much of the tank is heated as is possible. A small fan, directly connected to a motor, is used, which gives ample air with a very low power charge. It is also advisable that the tanks be cleaned once a week, or at least once every two weeks, to remove carbon and other sediment, so that the heat becomes as efficient as possible.

WASH ROOM OF THE WINTHROP ASPHALT SHINGLE COMPANY, SHOWING A GASTEAM RADIATOR AND GAS WATER HEATER WITH THERMO CONTROL

Some interesting figures are noted:
Month of October, 1917.
Operated twenty-six days.
492.5 tons of asphalt and fluxes used.
999,775 ft. of gas required.
2030 ft. of gas per ton.
400 deg. Fahr. average temperature maintained.
1.023 specific gravity coating.
1.19 specific gravity saturant.

Steam, too, is often used as a heating agent, but good temperature control is then an impossibility. Also softer asphalts must then be used, which decreased the quality of the finished product obtained.

Other Fuels

When oil, coke or coal are used as a fuel in the heating of asphalt the combustion chamber or fire box is red hot, and if the operator should be at all careless or negligent, and let the temperature rise over 500 deg. Fahr. (flash point), the danger of fire is serious. Consequently insurance rates are prohibitive; in fact, 90 per cent of the roofing companies in the country are unable to carry insurance with any reliable company.

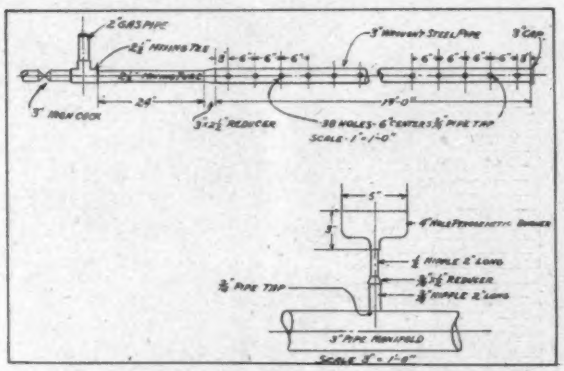
Because of the insurance rates many of the modern plants are building their heating retorts or tanks a short distance from the plant proper. Previous to gas installation this shingle company was obliged to reheat the asphalt in tanks at the place of usage, the drop in temperature being so great after it was pumped from the heating retort. Since they are using gas, the flue gases are used to heat the asphalt in jacketed lines, with good success. The drop in temperature being negligible, and, consequently, all inside fires have been abandoned, this again lowering the fire risk. The piping that cannot be heated with flue gases is heated with steam.

The method of control with gas, one of the advantages over other fuels, also tends to lower the fire risk, and no doubt was one of the deciding factors with the insurance companies, which enabled the asphalt shingle company we serve to place complete insurance with reliable and standard companies at one-quarter the cost previous to the installation of gas.

Only Company in Country Using Manufactured Gas as Heat Medium

This company is probably the only asphalt shingle and roofing company in the country using artificial gas as their heat medium. The installation has proven most successful, however, as may be deduced by the fact that whereas three stills are in operation at the present time, with a demand of 1,200 cu. ft. per hour per still, two additional stills are under construction, which will make a total consumption of 6,000 cu. ft. per hour.

To further prove the satisfaction found by this company in gas, we may add that they have installed gas as



DETAILS OF BURNER CONSTRUCTION

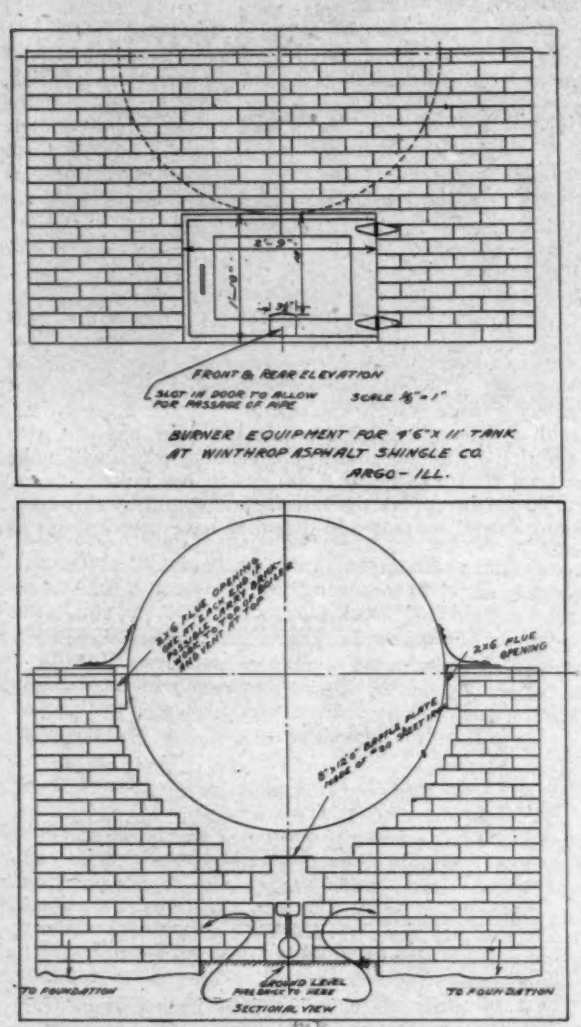
a heat for their office building, by means of gasteam radiators, there being about 600 sq. ft. of radiation required. Gas is also used for lighting throughout the office, a number of small gas arcs having been installed.

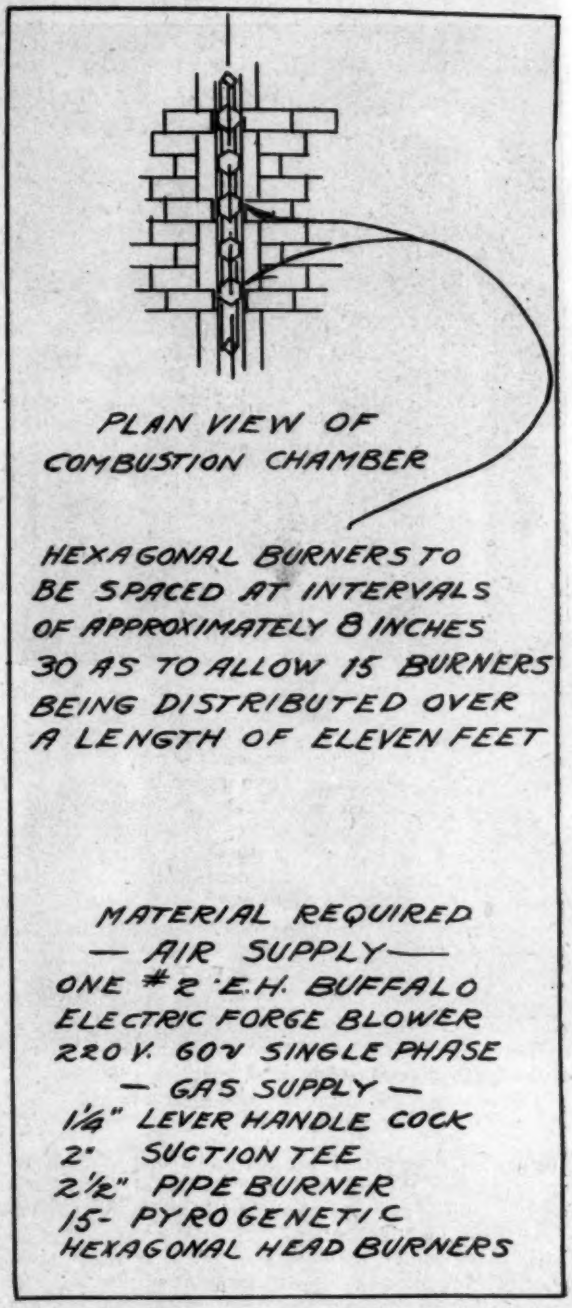
Small Variation in Load

With careful study of conditions and methods employed, gas would unquestionably meet with as complete a success in any other similar plant, and I would say a shingle factory of this type is very desirable for a gas company to have as a consumer. There is a very small variation in load or gas consumption from hour to hour. Some charging is done during the day, but the bulk is done at night. In this manner meter and pipe installation is much less expensive than in a factory using the same amount of gas for a shorter period.

For the consumer, too, there are great advantages in using gas as a fuel. Not only does it decrease the fire risk, but it gives greater heat control, accomplishes more work in less time, is labor-saving, requires no storage room, does not fluctuate in cost, is more cleanly, and, taking all factors into consideration, is more economical than other fuels.

In conclusion I wish, however, to call attention to the fact that the prospective consumer must not compare the cost of gas with that of other fuels upon a basis


FRONT & REAR ELEVATION
SLOT IN DOOR TO ALLOW FOR PASSAGE OF PIPE
SCALE ½"=1'
BURNER EQUIPMENT FOR 9'6"x 11' TANK AT WINTHROP ASPHALT SHINGLE CO. ARGO-ILL.
2x6 FLUE OPENING
TO FOUNDATION
GROUND LEVEL
TO FOUNDATION
SECTIONAL VIEW


PLAN VIEW OF COMBUSTION CHAMBER
HEXAGONAL BURNERS TO BE SPACED AT INTERVALS OF APPROXIMATELY 8 INCHES 30 AS TO ALLOW 15 BURNERS BEING DISTRIBUTED OVER A LENGTH OF ELEVEN FEET
MATERIAL REQUIRED
— AIR SUPPLY —
ONE #2 E.H. BUFFALO ELECTRIC FORGE BLOWER
220 V. 60 ~ SINGLE PHASE
— GAS SUPPLY —
1¼" LEVER HANDLE COCK
2" SUCTION TEE
2½" PIPE BURNER
15- PYROGENETIC HEXAGONAL HEAD BURNERS

DRAWING SHOWING GENERAL CONSTRUCTION OF BRICK-WORK FOR COMBUSTION CHAMBER AND TANK SUPPORTS

of B.t.u.'s. This is a false basis of comparison, the numerous other factors which enter into the final cost are essentials which must not be overlooked, such as decreased fire risk, cleanliness, greater control, space-saving (no irregular deliveries), labor-saving, and others too numerous to list, all of which not only equalize the cost of gas with that of other fuels, but make it even more economical, regardless of the cost or existing rate per 1,000 cu. ft. of gas.

Utility Securities Are Patriotic Investments

President Max Thelen, of the California Railroad Commission, recently pointed out the patriotic character of investments in public utility securities, and the important service being rendered by the development of financing sources in the home communities of utility companies. He said:

"At a time when the sale of public utility securities in the financial centers of the United States has become extremely difficult, California is fortunate in that a local market for securities authorized by the railroad commission has gradually been created and has largely assisted in meeting the requirements of our public utilities during the war. A very considerable portion of the public utility securities authorized by the California Commission since our entry into the war and used for additions and betterments have been sold to California investors.

"The people of California have thus helped their public utilities to weather the strain of the war and to make the betterments and additions necessary to produce light, heat, power and water for our industries and farms."

Success of Any Enterprise Is Founded on Its Fearless, Thinking, Creating Man Power

Self-Interest the Mainspring of Human Emotions and Endeavors—Some Thoughts for the Executive Supplied by C. H. Gaunt, General Manager of the Western Division of the Western Union Telegraph Company

There are few schools where the executive ability necessary to organize and direct effectively the efforts of others may be developed. Perhaps one of the best substitutes for such a school, however, is in the experience of those who have themselves learned in the school of hard knocks, and are willing to pass along their lessons. Through long experience, I have stumbled on certain broad, underlying principles, the knowledge of which in earlier years would have prevented heart-breaking mistakes and disasters; and it may be of value to others if I relate some of them here, declares C. H. Gaunt, general manager of the Western Union Telegraph Company in an article in *System*.

Not Given to Any One Person to Know or Do It All

Among the things which I have learned best is the knowledge that it is not given to any one person to know or to do it all. The officer who reserves to himself the sole powers of initiative and authority retains also the exclusive weight of responsibility, which means ultimate breakdown.

I remember one extremely capable executive who never learned to delegate responsibility effectively. He was the general manager of an important railroad. All his life he had been in the railroad business, and he knew the work from laying ties to financing by actual experience. He not only knew the work, he could do it better than most of the men working under him. And for that reason he could never quite permit himself to give the responsibility to other hands. His assistant, a capable man, was nearly shorn of the power of initiating new plans, or of assuming responsibilities that he might have taken off the shoulders of his superior.

To be sure, the assistant would almost certainly have made some mistakes that his chief would have avoided —but he was not the kind of man to make the same mistake twice. And even if he had done some portion of the work a little less well than the general manager, still he could have performed most of the duties well enough for practical purposes, and so would have developed.

The general manager broke down, physically, and died a comparatively young man. The hours of the day are not long enough, and no man's strength is sufficient to permit him to carry unaided the detail burdens of a great enterprise.

Success of Executive Rests Largely Upon His Ability to Wisely Delegate Authority

Definite physical limitations require the executive to delegate to others the responsibility for doing and the power to do the many things that he cannot personally do. His success as an administrator of large affairs thus rests largely on his ability wisely to delegate authority, and to train his responsible subordinates so that they will exercise that authority as wisely as if he personally were doing the work. The task of the principal officer, therefore, lies along the lines of education and review, and these larger activities should not be subordinated to absorption in details.

Mechanics of good organization, as of sound construction, demand wide and even distribution of strain. Duties must be divided into convenient units, with a competent head for each unit or department, each charged with definite responsibilities and armed with the power to make that responsibility effective. The division may follow either departmental or territorial lines—hardly both—and always with responsibility and power to act brought as close to the field of action as the strength and capacity of the various field officers will permit.

Centralization of Control Necessary

Centralization of control is necessary to co-ordinate departmental efforts, and to prevent duplication of labor, overlapping of authority, or relaxation of energy; but this control can usually best be exercised not directly by the chief executive, but through his responsible field representatives. If the chief officer meddles in the internal affairs of departments over the heads of the department executive, the administration of these subordinate officers is weakened. Also, the entire organization is taught to lean directly on the principal officer for stimulus and guidance, thereby overtaxing his own capacities and stultifying the initiative of his subalterns. The executive who seeks personal popularity or prestige with the rank and file at the expense of his responsible departmental heads, disrupts his own organization and takes back on his shoulders the burdens of responsibility which these unsupported under-officers will be obliged to unload.

A newly appointed vice-president on his maiden visit of inspection to the branch offices of his company formed snap judgments of a number of subordinate employees. Almost his first act upon his return was to instruct the branch managers to promote certain of these men and not to promote certain others.

How the Snap Judgments Were Wrong

The judgments hastily formed by the vice-president proved not to be correct in a number of cases. Two of the men that he had recommended for promotion were later found to be criminally short in their accounts, and at least one of the men slated for no promotion is now a responsible executive in the company. Not only did the vice-president needlessly interfere in affairs that the company was paying high salaried men to handle, but

by his errors in judgment he weakened his authority over those same men.

The best interests of the principal and his company demand that the local officer—the immediate superior—shall be made as responsible a man in the minds of his workers as his capabilities will permit. He must be the real head of his bailiwick, and subordinates should look to and not beyond him for guidance and instruction, stimulus and reward. Higher officials should deal through him, not independently, and his local acts should be publicly upheld even when they may call for private censure. To do otherwise is to humiliate him and impair his administrative usefulness. The same principle applies in the small business, as between the proprietor and his heads of departments, or between the proprietor and anyone to whom he has delegated the task of directing certain employees.

Wisely imposed responsibilities and judiciously conferred authority, with full executive support and encouragement, tend to develop and broaden the abilities of the individual by appealing to his innate pride of achievement, perhaps the ruling force behind the world's best work.

Experience the One Effective Ripener of Judgment

Experience is, of course, the one effective ripener of judgment, and only by the weight of specific responsibilities and by tasting actual power may you be sure that your fledgling subaltern will grow to the stature of his commander-in-chief. The wise executive will give his subordinates that encouragement to develop, thus building up around himself the perfect type of organization in which the talents and abilities of the principal are multiplied and carried down the line.

I feel that it sometimes pays if you deliberately let a man make a mistake through some act that he undertakes on his own initiative—it usually teaches him more effectively than you can teach him in any other way not to make that particular mistake again.

What Is the Difference Between Administration and Organization?

Organization comprises the selecting and fabricating of materials, and the assembling of parts of the complete dynamo of corporative management. Administration is the adjustment, the oiling, the upkeep, which enables the machine to perform its work.

If the dynamo is wrongly constructed, care and skill in maintenance may defer but cannot avoid its ultimate breakdown. Conversely, a perfect machine will give only imperfect results unless properly oiled, adjusted and kept in repair. Dynamo construction is based on definite rules of scientific precision. But no two machines are identical in actual performance.

An organization that is treated as a machine will perform like a machine, though with less efficiency. It will neither think, create nor grow. Machines do none of these things, but men do, and in the final analysis the success of any enterprise is founded on its fearless, thinking, creating man-power.

Administration a Problem of Human Equations

Administration becomes, therefore, a problem in human equations, the solution of which is to be found not in routines or curve sheets, but in deep understanding of the variable elements of human nature and sympathy with them.

The driving power of humanity has its source in the emotions rather than in the intellect, and the amount of energy brought to bear on any given task will depend largely on the strength of the appeal which the task itself, or the administrative officer for it, can make to the emotions of the individual.

Interest—self-interest, selfishness, if you will—is the mainspring of human emotions and endeavor, in work as well as in play. It is the factor to hunt for in the executive direction of business. The successful business organization is composed of people keenly interested in their work; the mediocre organization usually is not. Somebody has to lead men to like their work. That is one important test of the executive, whether he can induce in his men this liking for their work.

To like their work, men must be led to feel that "it is our work, and we are doing it." There must be a feeling of personal pride in excelling in individual effort. Each should be made to feel that his work is important, his endeavors vital.

Again, this is largely a question of allowing, through delegation of reasonable authorities and responsibilities, the widest practicable scope for personal initiative and individual development. These desired results require the greatest promotion of understanding and friendship between officers and employees, the mutual advantages of which are obvious. In their relations with subordinates, executives should regard themselves as something more than monitors or martinets of routine performance. Ills cannot be eradicated by edict or mandate.

Toleration a Fundamental of All Human Intercourse

Toleration, which is one of the fundamentals of all human intercourse, is nowhere more necessary than in the delicate relations between employer and employee. Toleration is free from arrogance. The tolerant executive puts himself in the other man's place, recognizes his difficulties and limitations, and appreciates his powers. He recognizes that the intention of the majority of human beings is to do the right thing, and that most difficulties between men are caused by the misunderstanding of each other's problems and viewpoints. The tolerant executive disciplines without emasculating. He discerns and condemns errors of methods without condemning the man. He can win a victory, to the conviction of all, without taking the last ounce of the spoils.

Why Unmethodical Hiring and Firing Doesn't Pay

A taskmaster gets out of his men only what he can personally drive into them. He furnishes the motive power. The machine stops when he does. On the other hand, the officer who elects to lead rather than drive brings to the task his own strength plus the concerted strength of his followers. Those who enthusiastically follow a genuine leader themselves share in the interest and pride of leadership, and the pressure does not relax when the executive hand is temporarily removed.

The militarist executive, ordinarily lacking ability to develop men, seeks to find good men by the hit-and-miss

method of hiring and firing, shifting or demoting—methods that almost invariably are doomed to eventual failure. Policies that deny opportunities for growth within the organization cannot attract proper material from without in the first place, or, having attracted it, cannot hold and use it.

Leadership Constructive

Prussianism in business is destructive. Leadership is constructive. The leader draws added strength to himself from the strength of his supporters, and grows rich in the creative satisfaction of seeing the abilities of subordinates bear fruit under his guidance. The leader inspires loyalty and attracts support. The martinet, seeking by corkscrew methods to extract both, discourages one and repels the other. Superficial contact in whirlwind inspections, say, often results in decorating some individuals with halos of praise and others with perhaps unmerited rebuke—in short, it leads him to punishment-first-and-investigation-afterward methods.

The president of one company sacrificed an excellent man in this way. A certain policy had been strongly favored by the president; he had expressed himself on it to a majority of his executives, but one department head, through no fault of his own, did not know the stand so emphatically taken by the president.

It's Usually Necessary to Hear Both Sides

At a company dinner which was attended by the president and most of his department heads, this man was called upon to speak. He touched on the policy in question, taking exactly the opposite view to that taken by the president. He expressed himself perhaps more forcibly than he would have done in ordinary conversation. The speech angered the president to such an extent that he ordered the man dismissed, without investigation. He lost a good man—and incidentally did a serious injustice.

The big accomplishments of record are usually instances of single-minded inspiration duplicated in manifold through the nodal points of organization.

Almost $14,000,000 Worth of Potash Produced in Country in 1917

The output of all potash materials produced and marketed in the United States in 1917, as reported by the manufacturers to the United States Geological Survey, Department of the Interior, was 126,577 short tons, which contained 32,366 short tons, or an average of 26.4 per cent, of pure potash (K_2O). This is more than three times the quantity produced in 1916 and corresponds very closely with the output predicted for 1917 by H. S. Gale, of the Survey, from a review of the mid-year statistics. The approximate average selling price of these potash materials at the points of shipment was $4.26 a unit—that is, $4.26 a ton for every 1 per cent of pure potash (K_2O) in the material marketed. This price corresponds to $426 a ton of pure potash. The total value of the potash produced in the United States in 1917 was $13,791,922.

Potash was produced in 1917 by eighty-two firms, including thirty-six wood-ash leachers, most of them operating small works. The total production is about 13 per cent of the normal consumption of potash in the country during the years immediately preceding the war. There is now no crisis as regards the potash supply of the country, though the prices paid for what is obtained are about ten times the normal prices before the war.

All firms have been seriously handicapped by shortage of labor and fuel, difficulties of transportation and inability to get needed equipment. Potash-producing plants have been generally included among the industries that are necessary to win the war, and there is a widespread sentiment in favor of assisting, so far as possible, the operations of these plants by giving special consideration to their actual needs. It is exceedingly unlikely, however, that Government operation or any direct Government financial aid to new enterprises for producing potash will now be considered necessary in view of the successful results obtained from the many privately conducted projects.

One Hundred Per Cent Satisfactory Service Obtained by at Least One of Gas Company's 908,022 Customers

The Consolidated Gas Company, of New York, in a monthly report, made public by Robert E. Livingston, states that during April there were 908,022 gas meters in use in the boroughs of Manhattan and the Bronx.

The public service commission tested 268 meters, of which 153 proved to be in perfect working order. Sixty-one were found to be not registering the amount of gas used by the consumers, fifty-two were a trifle too fast and one meter was supplying gas free to a lucky tenant of a Bronx apartment.

Superiority of the Widely Trained Man

"I think you will agree that there is great scope for the chemist in coke-oven practice," declared Dr. J. T. Dunn, in an address before the Coke Oven Managers' Association at Newcastle-on-Tyne, "and that he should be a man of as wide an education and training as possible. All the things I have enumerated involve chemistry in no narrow sense, and also a good deal of physics. For instance, your benzol tests are dependent on vapor pressures and fractional distillation. On the other hand, in regard to the material of your ovens, you require to be familiar with the principles of conduction of heat. If you go in for nitrate of ammonia you require a certain amount of electrical knowledge; and I think it can be said generally that the wider a man's knowledge, and the wider his training in every branch of physical science, the more likely he is to be able to overcome difficulties that may present themselves, and to be able to initiate improvements in his processes—improvements which are particularly important in regard to coal, which is our greatest national asset, and which we shall have to economize as well as we can and so make the best of the resources we have. From that point of view it is desirable that in controlling the chemical side of coke-oven practice we should have men as widely trained as possible, and of as broad an outlook as possible. A man who has had a wide training, and then has turned to work in a particular direction, will almost always have an advantage over the man only trained in a particular direction, even if he has trained for a longer period, and it is from that point of view that I have instanced the things I have gone over."

Explains Away Confusion Existing in Minds of Some as to Readiness-to-Serve and Minimum Charge—What Meter Rental Involves

Samuel S. Wyer Defines Service and Points Out Differences in Cost of Various Kinds of Service—Similarity of Readiness-to-Serve Charge to Club Dues

Readiness-to-serve is a form of minimum charge made to cover the costs incurred by the utility in holding itself in constant readiness to render service, without, however, delivering any units of service. The actual units of service (such as kilowatt-hours of electric energy, cubic feet of gas, gallons of water, or number of messages) used are paid for by an additional rate schedule.

The readiness-to-serve charge has been made primarily in electric utilities; however, this practice is applicable to all public utility rate schedules. The term "demand charge" is used synonymously with "readiness-to-serve."

The term "minimum charge" as used in public utility rate parlance means merely the minimum monthly bill which will be rendered, which includes a certain definite number of units of public utility service. The consumer, however, pays the entire minimum bill, regardless of whether or not he has used the number of units of public service that go with the minimum bill charge, explained Samuel S. Wyer, consulting engineer, of Columbus, Ohio, in a paper presented before the recent annual convention of the Natural Gas Association of America.

A readiness-to-serve charge merely covers the cost of standing ready to render the service. It never includes any units of service. Where no minimum charge or readiness-to-serve charge is made the utility is compelled to incur a number of expenses to carry consumers who pay very little to the utility. When such carrying costs are not paid by the consumer for whom they are incurred, they must, therefore, be carried by other consumers, and thus produce discrimination. In brief, while the minimum charge is an approach to non-discrimination, the readiness-to-serve charge is its realization.

Meter Rental Distinguished from Readiness-to-Serve and Minimum Charge

The readiness-to-serve charge is made simply for service rendered. The minimum charge bill is a combination charge for service rendered and a certain number of units of service sold.

Meter rental is rental for equipment which the utility is under obligation to furnish the consumer, and the rental is added to the bill regardless of the monthly service consumption. It is wrong in principle and ought never to be considered. Failure to distinguish between readiness-to-serve, minimum charge and meter rental has been the cause of much confusion and some unsound decisions from judicial bodies. A number of attempts have been made to regard the meter rental as synonymous with a readiness-to-serve charge; however, this is illogical because what would be embraced by the meter rental as far as consumer costs are concerned would be represented only by the first part of the readiness-to-serve charge as covered by the consumer charge. Such a substitution of terms would ignore entirely the demand charge feature of the readiness-to-serve charge and would still be discrimination.

The term "connected load" means the aggregate capacity of all the public utility service using devices on the consumer's premises. It represents the maximum demand that can be made for service when all the public utility service using appliances are in use at the same time.

Practically every public utility consumer has more or less equipment that is seldom used. The term "active connected load" has become an arbitrary designation for that part of the consumer's total connected load that is generally, or may be generally, in use.

Service Features Dominate Public Utility Business

The furnishing of a service rather than the delivery of a commodity or product is the dominating feature of public utility enterprise. Thus, when an electric utility takes crude coal and converts it into usable electric energy available for instant use at the consumer's appliances, or a water utility fetches and maintains water at the consumer's fixtures, or a manufactured gas utility converts crude, solid or liquid fuels into gas available for the consumer's instant use, or a natural gas utility prospects for, finds and reduces the fugitive wandering and uncontrolled natural gas to possession, and then converts this crude natural gas—made up of a mechanical mixture of permanent gases and condensible vapors—into a controlled and usable service delivered to the consumer's fixtures, usually many miles from the gas field, the service features pertaining to the method and manner of delivery, and standing ready to service are of much more importance than the product or commodity.

Relation of Fixed Charges and Load Factor to Readiness-to-Serve

With natural gas the "standards of public utility service" that may be reasonably asked for are controlled by the fact that natural gas is an exhaustible resource that is becoming scarcer every year, and it is the only public utility service that does not, and, in fact, cannot, create the basic feature of the service that it renders to the public. There is no regeneration in the present fields, that are now being depleted; when the gas is once used it is gone forever. Every time a natural gas company sells 1,000 cu. ft. of gas it is selling a non-placeable part of its property. That is, the natural gas company is alone in depending entirely on the caprice of the supply of its primary source of public utility service. This ought to make it self-evident that more latitude must be allowed in natural gas plant standards of service than are necessary in other public utilities.

If the total annual expenses of a utility are taken at 100 per cent, then the fixed charges are that part of the total 100 per cent of annual expenses that must be met in order to maintain the integrity of the property value, regardless of the quantity of service rendered. That is, these fixed charges accrue regardless of the volume of the utility's business and range from 49 per cent to 73 per cent, depending on the type of the utility.

If the total continuous full load of the serving capacity of the plant is taken at 100 per cent, then the load factor is that part of the total 100 per cent of service capacity that is actually sold. Seasonal and hourly load variations—with marked peaks—are conspicuous features of public utility plants. These result in low load factors and many potential service facilities cannot be utilized, although the inevitable fixed charges are constantly accruing. Most utility plants must be so operated as to have not more than 30 per cent load factor, with, of course, a large range of individual variations for individual plants. That is, the utility must be in constant readiness-to-serve, on account of the facts just mentioned, and only a relatively small part of its total serving possibilities can be actually utilized.

The readiness-to-serve charges are much like the membership dues in a club; the charge gives the house privileges, but all service used is paid for in addition. No club could exist without making its members pay for the cost of service included in giving them an opportunity to enter the club house and use its services. In fact, a readiness-to-serve charge is simply a monthly due for membership in a community enterprise.

Basis for Readiness-to-Serve Charge

Quite frequently the readiness-to-serve charge is divided into the following two parts:

1. Consumer or Customer Charge.—This includes all of the expenses pertaining to the consumer's service connections, and may be analyzed as follows, where the various items relate to the service line and meter:

(a) Depreciation on service and meter.
(b) Return on value of service and meter.
(c) Repairs.
(d) Clerical work.
(e) Meter reading cost.
(f) General overhead expense.

If the services and meters represent say 10 per cent of the total property value, then 10 per cent of the general overhead expense ought to be prorated on this part of the business.

2. Demand Charge.—Pertaining to each consumer's possible demands for service from the utility. That is, this considers the consumer's connected load and the total demands that he may make on the utility for service at any one time.

No hard and fast rule can be laid down. While the consumer or customer charge part is clearly defined, the demand charge part of the readiness-to-serve charge opens a wide field for difference of opinion. In this all conclusions must be tempered by business judgment and sometimes by expediency and policy. No conclusions or estimates can be made which will be universal in their application. The fundamental feature to always be borne in mind is that the primary function of the readiness-to-serve charge is to stabilize and equitably distribute the cost of carrying the various consumers, rather than to produce a gross revenue which might all come from a uniform output charge against all consumers.

Limits of Readiness-to-Serve Charges

There is a mutuality of interests between the producing, transporting and distributing branches of the natural gas business. Each must be properly co-ordinated, and must be made profitable if continuous service for the future is to be expected.

Why There Are Relatively Few Adjudicated Readiness-to-Serve Charges

The adjudicated minimum charge monetary allowances, now in force in a large number of public utility rate schedules, have thoroughly established the minimum charge doctrine as a fixed part of American public utility jurisprudence. If, therefore, little question is made of the minimum charge, less question should be raised regarding the more equitable and more just readiness-to-serve charge. As so well stated by the Louisiana Supreme Court:

"It may be well to mention that the principle of making this distinct and separate charge for service is the same precisely which underlies the making of a minimum charge by gas, electricity and water companies for gas, electricity or water not used, and that the making of a minimum charge may be said to be universally approved." P. U. R. 1916-E, page 1017, State vs. Sloan, June 30, 1916 (139 La. —, 72 So., 428).

The large number of readiness-to-serve schedules now in effect—the majority of these in States having public utility commission jurisdiction—show the widespread use of this equitable method of charging. It is for this reason that it is now little questioned and therefore seldom litigated.

Conclusions

The primary function of the readiness-to-serve charge is to eliminate discrimination by making all consumers pay for service rendered separate and distinct from gas delivered.

The readiness-to-serve charge is more equitable than the minimum charge.

There has been a marked lack of appreciation of the distinction between readiness-to-serve charges and minimum charges, and judicial bodies have frequently erroneously used the two terms interchangeably.

It is important to bear in mind that regardless of the name applied, the readiness-to-serve charge never includes any quantity of gas.

The determination of the proper amount of a readiness-to-serve charge is more a matter of judgment than a following of rigid rules or mathematical calculations. For a given total income, whatever is derived in the aggregate from the readiness-to-serve charge makes the rate per 1,000 cu. ft. of gas actually used that much less.

Up to date (April 9, 1918), there has been but one Supreme Court decision (namely, Louisiana) sustaining the readiness-to-serve charge principle.

The reason why there has been so little litigation is that the readiness-to-serve charge has had such a widespread use that it is now little questioned, and, therefore, seldom litigated.

Readiness-to-serve charges have been judicially allowed in seventy-five cases before the State public utilities commissions of Arizona, California, Colorado, Illinois, Indiana, Missouri, New Jersey, New York, First District, New York, Second District, Ohio, Oregon, Pennsylvania, Washington and Wisconsin.

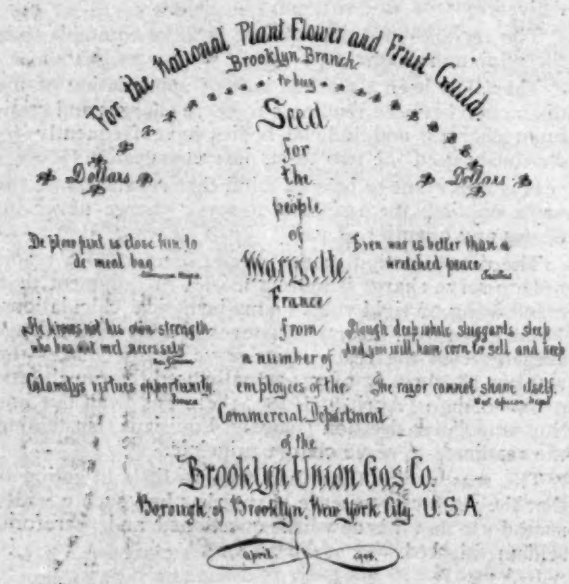
Readiness-to-serve charges are in use in over 250 towns in the United States for electric, gas and water service.

How the Gas Companies Are Helping the Nation

FRED FOSTER WATERHOUSE has been inducted into the United States service at his own request, as a gunsmith in the Ordnance Department, and left Hartford, May 20, for Camp Hancock, Ga. He has been employed at Colt's for the past two years on machine gun work, and previous to that time organized and managed the maintenance department of the Hartford (Conn.) Gas Light Company.

THE SANDUSKY (OHIO) GAS & ELECTRIC COMPANY employees attended a meeting of the Barstow Club, which is composed of employees of the company, on Wednesday evening, May 1. The members had the pleasure of listening to two inspiring addresses by Judge E. B. King and A. W. Link, president of the Bay View Foundry Company. An organization was perfected for the sale of Thrift and War Saving Stamps.

THE BROOKLYN UNION GAS COMPANY employees of the commercial department sent the above reproduced design with their contribution to the National, Plant, Flower and Fruit Guild for the fund being raised to replant the orchards and gardens in stricken France. T. M. Ambler is manager of this department.



F. E. HOAR, for a number of years at the head of the gas and electric department of the California Railroad Commission, is stationed at Petersburg, Va., where he is in training working for a captain's commission in the Engineers' Corps.

H. LEDYARD, who was formerly connected with the Art Stove Company, and who is stationed at Camp Custer, Mich., has recently been made first lieutenant, U. S. A.

THE DOHERTY ORGANIZATION'S new Red Cross subscriptions will be approximately $280,000, $200,000 being apportioned among the properties, with an addition of $100 for each Doherty soldier and sailor in the service.

THE CHICAGO PUBLIC UTILITIES Liberty Loan quota, including the Peoples Gas Light & Coke Company, was $5,850,000. The amount subscribed was $7,436,300, a record of 127 per cent.

W. J. SEINWERTH, of the auditing department of the Peoples Gas, Light & Coke Company, has enlisted in the Tank Corps of the United States Army. He reported at Columbus, Ohio, May 17, and went from there to Gettysburg, Pa.

CLIFFORD W. HAIG, formerly with the St. Augustine Gas Company, but more recently located at Miami, reached St. Augustine, Fla., recently, en route to France, where he will be engaged in Y. M. C. A. work. Mr. Haig will remain in St. Augustine for a few days, awaiting his assignment. He has been very active at Miami in similar work for the students at the aviation training station, and he was selected for the broader and busier field in France.

Western Oil Men Visit Philadelphia

A Doherty oil convention was held at Philadelphia on May 18, 19 and 20, following the Doherty birthday celebration in New York, and the Eastern and Western men of the petroleum industry were enabled to exchange beneficial ideas.

On Saturday all present took a trip to the plant of the Union Petroleum Company, and that of the Crew Levick Company, known as the Mifflin Street Refinery. Later an inspection was made of Petty Island, the new refining development of the Crew Levick Company in the Delaware River, opposite Philadelphia. Petty Island was purchased some time ago by the Crew Levick Company in anticipation of larger operations in the future. There is now in the finished stages of construction one of the most modern compounding barreling and export stations in the East.

On Sunday the party left the Race Street wharf on the Crew Levick tug "Chester," and made an inspection trip of the water fronts as far as Marcus Hook, luncheon being served at Essington. This gave the party an opportunity of viewing the extensive war operations in the ports of Philadelphia, Chester and Marcus Hook.

Monday was taken up with a conference at the Manufacturers' Club, followed by an automobile trip around the city.

The visitors included Alfred J. Diescher, Harry D. Frueauff, W. A. Williams, R. C. Russum, P. M. Miskell, H. R. Straight, H. Rosenfield and Hugo Hovel.

Wants the Natural Gas Companies to Go Into the Appliance Merchandising Business

Karl Emmerling Sees In the Departure a Means of Cutting Down Consumption During the Winter Months, at the Same Time Retaining the Good Will and Continued Patronage of Consumers

The price and shortage of coal during the winter of 1917-1918 caused an unprecedented demand for natural gas for heating purposes. This demand was such that most companies producing and distributing natural gas found it impossible to supply an adequate quantity to care for all domestic heating requirements, although every company did its utmost. According to all competent authorities neither the coal nor gas situations will be improved any this coming winter.

The situation from both the gas company's and the consumer's point of view is very serious, and steps should be taken to remedy it, declared Karl Emmerling in a paper presented at the annual meeting of the Natural Gas Association of America, held this week at Pittsburgh. Another co-related feature of importance is this: that the normal domestic peak load which now perplexes many natural gas companies in winter, and sooner or later will prove a thorn in the sides of all, is directly responsible for the lowering of domestic pressures to a point which has led to the public dissatisfaction, now very outspoken in various communities, and the demands which are being made for the establishing of impossible pressure standards. It has been suggested in some quarters that the curtailment of the present volume of domestic consumption might be effected, and that the substitution of a more continuous, well-defined volume of industrial consumption can be effected. But against this we have the unanimous pronouncements of the consuming public that preferential service be given to domestic consumers, and in this, generally speaking, the gas companies have not only concurred, but made their industrial contracts subservient to domestic consumption. Since this seems to be a settled policy, it would appear that the only logical thing for natural gas companies to do is to set about to alleviate the burdensomeness of domestic peak load requirements in extreme winter weather, and surely no one element will so quickly relieve the excessive drain upon their supply during such periods than to have a substantial percentage of their largest domestic users of gas ready to discontinue its use immediately whenever necessary.

Natural Growth of Cities an Added Factor

Some companies are most fortunate than others in their source of gas supply and the quality of their service is not lowered to any great degree in the cold weather, whereas other companies have from one to thirty days of low-pressure trouble, and has, as a result, much trouble in keeping their consumers satisfied. This is largely the result of lack of knowledge on the part of consumers of the general conditions surrounding the production of gas. Whether this is because of inactivity on the part of the gas companies in placing the matter before the consumers, or the inability heretofore to interest the consumers in facts of this kind, is an open question, but the fact remains that most consumers of natural gas believe that these shortage conditions could be relieved by the turning on of more wells, the drilling of additional wells, or the tapping of additional reservoirs, not realizing that the gas companies have for several years been at their wit's end to increase the production with very little success.

It must be apparent to every thoughtful natural gas man that the greatly increased demand for their product created by reason of the coal shortage during the past winter, coupled with the constant and natural growth of the cities and towns, has brought about not only a temporary shortage in severe winter weather, but either has or will bring about permanent shortage during succeeding winters, unless an effective means of relieving the domestic peak load requirements during the coldest weather is found and adopted.

Essential That Profitable Consumers Be Retained

Gas companies generally find that the aggregate number of consumers is increasing in direct proportion to the growth of the municipalities which they serve, while they are either experiencing trouble in obtaining the present supply of gas, or finding that even this is impossible, which brings them face to face with the fact that if anything like the present earnings are to be maintained it is essential that they in some way maintain at least the present proportion of profitable consumers; everyone, generally speaking, agreeing that as soon as a consumer fails to use gas for heating, at least a great portion of the heating year, he becomes an unprofitable consumer for the reason that the overhead and cost of gas is in excess of the amount derived for gas sold, at present rates, for ordinary cooking and lighting purposes. So that it is essential that the gas companies take some immediate steps

(*Continued on page* 530)

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At the Meeting to Amalgamate

The indications point to a greater attendance at the meeting to amalgamate the American Gas Institute and the National Commercial Gas Association than it looked like when the intention to hold the meeting was first made public. What will be the attitude of those who are present? Will it be one of passive acquiescence to the plan in its entirety, or will it be aggressively corrective and constructive?

The AMERICAN GAS ENGINEERING JOURNAL does not believe the Joint Committee, when it prepared its prospectus, believed that it was doing any more than merely providing a basis for discussion and readjustment. It is certain that it had no idea in mind that the plan would be accepted in its entirety.

Considerable dissatisfaction has been manifested with various features of the plan. Those who may be expected to qualify as active members do not relish the apparent club over their heads that is implied in Section 3 of Article III of the constitution and by-laws. Some manufacturers of equipment or appliances have an idea that the association is going to ask them to reveal their gross revenues, and they are not manifesting any great enthusiasm over the idea. Still other sources of dissatisfaction with the plan as outlined have been pointed out to the AMERICAN GAS ENGINEERING JOURNAL, but it is not our intention to discuss them. All, we are certain, will be corrected if the gas man comes to the meeting with a full realization that he is building an organization whose success is of paramount importance to the welfare of the gas industry. Unless the foundations of this organization are laid for permanence, it is better, indeed, that it should never be effected.

There should be no shackles attached to its independence of action. It must be—to be truly of service—fearless and independent in the discharge of its functions. If, in discharging them, it must run counter to viewpoints of the most powerful interests in the industry, there should be no shackles attached to prevent it, no menace to its existence, that would make for craven hesitancy rather than courageous action. It must be remembered that this contemplated organization is to be the physical personification of the whole gas industry, not of one or more great interests. Unless such an association is practically possible at this time, it would seem best to let well enough alone. There will inevitably come a time when such an association will be practically possible, if it has not now.

Extreme discrimination should be shown in the selection of the man who is to be secretary-manager of this association. He must not be a one-groove man, not alone because a man with a broad and intimate knowledge of all the branches of the gas industry will be needed to adequately discharge the duties of the office, but more essentially because in

the one-groove man, the man who could not engage in other work and make relatively as good a living, there undoubtedly would be a tendency to sacrifice principle to expediency; to be a catspaw and a clerk, rather than an administrator along creative lines. And once this man has been found, he should not be hampered in his power to do things by artificial fetters and petty constitutional limitations.

Most important of all, however, is an independent and enthusiastic membership. Any association is a composite of its members. Let all hampering restriction be taken off the by-laws as to membership except those relating to vocational and personal morality. Let the individual member feel that the association is *he* and *he* is the association. Even if other defects of the proffered plan are permitted to slip by, no material harm can be done so long as the membership works as a team and is individually free from restraining nooses.

The gas man at the amalgamation meeting should be outspoken and frank in his criticisms and suggestions. He should be thoughtful in casting his vote on every matter on which votes are asked. In the final analysis, it is *his* association and his whole interests are indissolubly linked in its welfare. He would not travel his family in an automobile with an axle that might snap at any moment. No more should he jeopardize his business by having its official organization erected on a flimsy and defective foundation.

The Situation At Indianapolis

There are thrills to be found even in the terse narratives of the drab routine of the gas business. To the reader of the matter-of-fact reports published in the news pages of the technical gas journal, there cannot but come a stirring of the pulses as he pictures, what the narrative does not state, the stalwart sense of public service, of duty and broad patriotism that lies behind such accounts as those of the conception and financing of the new enlargements at Indianapolis, which have recently occupied considerable space in the news columns of the AMERICAN GAS ENGINEERING JOURNAL.

The situation of the company serving this city last winter constitutes an interesting chapter in the history of the gas industry. Here was a company that had built a plant amply capable of meeting a demand vastly greater than anyone could foresee would arise suddenly, and with liberal provision for the future normal growth of its city. It was characterized by its creatively intelligent and ambitious new business activity. What it did in water-heating activities constitutes a bright page in gas company commercial annals. And it was Indianapolis—the first case on record in this country, to the best of our knowledge—that asserted and proved that even so cumbersome—in the fuel application sense—an operation as galvanizing could be done cheaper and more efficiently with gas than by coke. Apparently this company's main thought was to build up more quickly than normal growth could be depended upon a business that would utilize a greater part of its existing equipment.

Then, suddenly, with a capacity of about ten million cubic feet a day, this company found itself confronted with a demand that reached sixteen million cubic feet. Its low rates, in normal times a commercial advantage, in this case proved its vulnerable point. The people of Indianapolis, confronted with coal costs and scarcity, found gas, utilized in reasonably efficient appliances, cheaper on a fuel basis than coal for house heating, and that, even burned recklessly, in open grates, etc., its cost was not prohibitive. The result was the nearest approach to gas rationing on a considerable scale that has yet occurred in this country.

Throughout the industry there was manifest a considerable interest as to what the Indianapolis company's next move would be. Gas men know what extensive construction under existing conditions entailed—a big premium on the cost of each unit of equipment and on each structure, and expensive capital. The company has supplied the answer.

Its sense of responsibility towards its consumers, to its city and to its country predominates over its hesitancy in confronting the obstacles in the way. It will build—even though it is expensive. And it will finance its new construction not on the basis of cheapness at the present time, but on that of the future financial security of the company.

Putting It up to the Locality Served

Little fault can be found with the attitude of the War Finance Corporation in refusing loans to utilities which are unable to meet their fixed charges. There may be disappointment on the part of some harassed managements whose hands are hopelessly tied in the meshes of petty local politics, but none will deny the logic of the Government's stand.

There has been a tendency for years on the part of the local politician to get whatever betterments he could for his community at the expense of the Federal Government. Sometimes the motive behind his quest was no higher than merely creating employment in his territory. It is but natural that those who hold the reins in local territories, seeing in the War Finance Corporation a chance to have the Federal Government pay the extra expenses their constitutents should properly pay, might hang back on rate increase petitions, figuring that nothing would be lost, merely that the gas company would be driven away from home to get the money needed for its very existence.

Good service costs something. It is surprising how little gas companies have been able to produce it for, but even with the maximum efficiency its cost cannot

be reduced to nothing. And the last thing the conscientiously managed company will fall down on, regardless of the sacrifices it must make to prevent it, is its reputation for flawless service.

In maintaining the quality of their service as they have, the gas companies have knowingly psychologically worked against their own interests. While they have cried "wolf" in the columns of the daily press—and truthfully—of meagre or no earnings, they have still maintained their service at as high, and even higher, standards than before. The result has been the consumer is unable to visualize the situation.

He has consequently been apathetic towards the companies' treatment by his regulatory commissions. If the service he was getting was half as good, then he would have begun to interest himself, would have realized that something was wrong.

The AMERICAN GAS ENGINEERING JOURNAL does not believe that this latter program should have been followed. The subject is alluded to merely to point out how greatly all factors concerned combine to compel the utility man to wage his battle with one arm tied, so to speak.

But with the attitude of the War Finance Corporation made clear, it is made equally clear that, with those companies which a narrow thinking regulatory body compels to continue serving gas at a losing figure, there must come a breaking point.

It is essentially up to the consumer. If he desires good service he must pay for it. The slacker community is to receive scant consideration at the hands of the Federal Finance Corporation. No company, regardless of its own desires, can continue a high standard of service at a loss indefinitely. The only relief it can expect to meet its fixed charges is as it should be, local relief. If this is not forthcoming, the costs of service must be cut and the quality of service proportionately impaired.

Publications

Finding and Stopping Waste in Modern Boiler Rooms

Flexible cloth backed volume; 270 pages; illustrated; 7 x 4¾ in. Prepared by Engineers of Harrison Safety Boiler Works, Philadelphia, Pa. Price $1 net.

The saving of coal is the purpose of this practical handbook, which is addressed to power plant owners, managers, engineers and firemen. The preface states that such statements, tables, charts, etc., have been selected as were supported by experiments and tests, references being given wherever possible to the original authorities. The latter include many well-known engineers and writers in technical periodicals, also authors of papers before engineering societies, while the excellent bulletins on the utilization of fuel issued during recent years by the United States Bureau of Mines have been freely drawn upon. Pains have been taken to compare statements and to check each source of information against others.

The work is divided into five sections, the first of which is about "Fuels," under which are considered the coals of the United States and their classifications, size of coal, coal sampling, proximate analysis, ultimate analysis, heating value of coal, ash and clinker, value of coal for steaming purposes, purchase of coal under specification, washing of coal, storage and weathering of coal, coal measurement, oil fuels and gaseous fuels.

The second section is on "Combustion," taking up the chemistry of combustion, air theoretically required, grates and grate surface, hand-firing methods, thickness of fire, mechanical stokers and their operation, furnace temperature, furnace gases, clinker, draft, flue and stack proportion, draft required by stokers, mechanical stokers, draft gauges, dampers, flue gas temperatures, flue gas analyses, CO_2 recorders, what CO_2 indicates, what CO indicates, air requirements and supply, preventing excess air, smoke and smoke prevention, burning oil fuel, burning gaseous fuels, and burning powdered coal.

The third section treats of "Heat Absorption," including heat transmission by conduction, convection and radiation, heat transfer from a fluid in a channel, heat transfer in economizers, air heaters and superheaters, improving heat absorption, relation between heating surface and boiler capacity, boiler setting, refractories and firebrick, soot, scale, softening feed water, and feedwater heating.

The fourth section on "Boiler Efficiency and Boiler Testing" covers heat balance, heat absorbed by boiler, heat losses due to moisture in the coal, hydrogen, chimney gases, CO, combustible in the ash, moisture in the air, and unaccounted for loss, efficiencies, efficiences with different coals, boiler capacity and efficiency, and boiler trials.

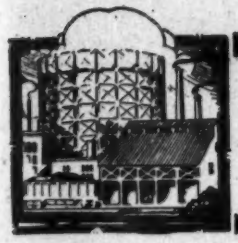
The fifth section on "Boiler Plant Proportioning and Management" discusses various arrangements of auxiliaries with regard to their effect upon feed heating, and also describes the Polakov functional system of boiler-room management.

The book has been compiled by George H. Gibson, member American Society Mechanical Engineers, assisted by Percy S. Lyon, now captain of Coast Artillery. The proofs were read by Henry Kreisinger, who conducted for the United States Bureau of Mines many of the investigations quoted in the text.

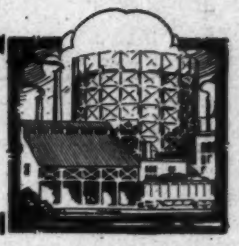
Abstracts of Reports of Corporations—New York State, Second District

Cloth-bound volume; 9 x 12 in.; 343 pages. Issued by the Public Service Commission for the Second District, New York State, Albany.

Deals with reports of electric and gas corporations under the commission's jurisdiction, giving information as to balance sheets Dec. 31, 1916, fixed capital, funded debts, capital stocks, operating revenues, expenses and statistics, accidents, etc.



NEWS OF THE GAS INDUSTRY



War Finance Corporation Will Not Consider Utilities Unable to Meet Fixed Charges a Good Risk

Puts It up to Localities Served to Enable Companies to Meet Current Expenses—Local Authorities Urged to Give Prompt Consideration to Increase Applications

Utility companies that are unable to meet their fixed charges will not be considered as a good risk by the War Finance Corporation and need expect no aid from that organization, it was officially announced in Washington, May 23.

The directors of the corporation feel that communities urging aid for their utilities should consider higher rates for these utilities and that in consequence the problem of aid for these companies lies largely at the door of municipalities.

The directors have under consideration applications from public service corporations in every section of the country for loans aggregating a large amount.

"They do not feel," an official statement says, "that they have any authority under the law to make loans except upon adequate security as required by the act, and they are convinced that the inability of a utility company to earn a sum at least sufficient to pay its fixed charges, taxes, maintenance and repairs is conclusive evidence of the inadequacy of its own obligation as security.

"The directors of the corporation feel that the localities served by these various public utility enterprises should not expect the War Finance Corporation to make advances to any utility company whose statement shows that it is in actual need of increased revenue. It is a matter for the local authorities to determine whether or not an increase in rates sufficient to maintain the enterprise as a going concern should be granted.

"It is urged, therefore, that the proper authorities give prompt consideration to applications made by public utilities for permission to increase rates in order that the directors of the War Finance Corporation may know when applications for loans are presented by public utility corporations whether or not they will be able to give adequate security."

New Jersey Company Employs Women as Gas Meter Inspectors and Collectors

Women gas meter inspectors and collectors are now included in the war-work program in south Jersey. Charles W. Hoy, general superintendent of the New Jersey Gas Company, with central offices in Glassboro, and supplying more than seventy towns in Gloucester and Salem Counties and sections of Camden and Cumberland Counties, announced that his company would put on women inspectors and collectors in its entire territory because of the difficulty in obtaining men.

Richmond Consumers to be Supplied With Artificial Gas

The Richmond (Ind.) Light, Heat & Power Company, which receives its supply from the West Virginia fields, has announced that the natural gas supply is to be cut off Nov. 1. The supply has been rapidly diminishing in the last three years and last winter was not adequate for domestic purposes during excessively cold weather. The company will again begin the manufacture of artificial gas, and an attempt will be made to use a mixture of natural and artificial gases for local consumption.

Bond Issue Authorized for Construction of Forty New Coke Ovens

In a recent order the Public Service Commission of Indiana has authorized the issuance of additional securities by the Citizens Gas Company, of Indianapolis, for the purpose of constructing forty new coke ovens, which are needed much in this city, not only for the expected heavy demand for domestic gas next winter, but also to enable the company to approximate the ever-increasing demands of the Government for toluol.

Although the commission takes the position that the financial arrangements in connection with the issuance of the new securities are far from satisfactory, it allows the deal to go through, because of the pressing war need of the new construction. The commission hesitated some days, and made overtures to other financial concerns than Blodget & Company, of Boston, which finally will take the securities at 90 per cent of par value. The original offer was 85 per cent, and the commission would not authorize the issue at that figure. The commission discusses this feature of the transaction at length in the opinion, which follows:

The Citizens Gas Company, owning and operating an artificial gas utility in Indianapolis, on April 24, 1918, filed its petition for authority to issue and sell $1,500,000 of its 7 per cent gold bonds, to be dated about May 1, 1918, due serially from one to five years from the date thereof, and secured by a mortgage deed of trust to a trustee upon all the property of the company, such bonds to be sold at not less than 85 per cent of the par value thereof, and the entire proceeds of the sale to be used in paying the expenses of installing forty additional by-product coke ovens at its Prospect Street plant together with necessary by-products plants and necessary connection between the existing system and the new plant and system.

Copies of the petition, together

with notice of the time of hearing, were served on the city of Indianapolis, the Indianapolis Chamber of Commerce, Indiana Manufacturers' Association and Indianapolis Business Men's Association, and general publicity was given through Indianapolis newspapers to afford all interested opportunity to be heard.

At the hearing, held in conformity with the notice, in the rooms of the public service commission on May 11, 1918, only the company appeared, although there were present representatives of financial concerns. At a subsequent hearing, held on May 13, appearance was entered only by petitioner, although numerous representatives of banks, trust companies and bond houses were present at the request of the commission.

The evidence submitted at the hearing sustains the averments of the company in regard to the necessity of enlarging its gas and by-product facilities to meet the local demands for service and the Federal Government's war demand for toluol and ammonia. The evidence further reveals that the total cost of the proposed improvements will not be less than $1,250,000. There are conflicts in the testimony in regard to the advisable method of financing these additions.

The evidence reveals that it will not be necessary for the company to sell the securities such as prayed at 85 per cent, and that the stipulation as to minimum price may be raised to not less than 90 per cent, to which stipulation, however, there may be appended certain contract obligations in regard to net profits derived from said new installations in the year 1919, or during the first full twelve months following the completion of said installation.

In considering this petition, several unusual features are presented. The commission is unwilling to enter the appended order without making record of some of them. The company, as a gas utility having the lowest rates of any similar utility operating in American cities of like size, has attracted national attention. Its low rates have been accepted as standards to be attained by other cities. It is to be expected, in light of these conditions, that an order giving authority to issue securities which, considering the rate of interest and discount, will result in the money derived therefrom costing the company in excess of 9 per cent, also will be taken, or used by those who may be interested, as a precedent which might prove to be wholly unfavorable and unfair. Therefore this order is not to be interpreted as stating general principles to be followed by the commission, but rather is it to be interpreted in the light of the exigencies particularly pertaining to the instant case.

The evidence indicates that the company can obtain funds necessary to cover said additions at a cost of approximately 8 per cent through the medium of a sale of its common stock at 20 to 25 per cent above par. The record also reveals that unusual stipulations make it legally impossible for them to issue preferred stock which, if issued and sold, would probably enable them to command money as low as 7 per cent.

The evidence reveals that under the terms of its first and refunding mortgage and its trust deed, the company is unable to take down its existing first mortgage bonds on account of contemplated improvements. Under these unusual conditions, it is herein proposed to issue short time 7 per cent serial bonds, running from one to five years from date, and secured by a general mortgage on its property, said securities being junior to its first and refunding mortgage bonds.

In light of the record and other data, the commission is convinced that the financing of said addition on the basis of 7 per cent serial bonds running from one to five years from date of sale under conditions hereinafter provided, has not been provided for at the best discounts. This is in part attributable to the necessity of beginning installation of said facilities immediately following the issuance of order P. S. C. I. No. 3805, so that said additional gas generating facilities may be put into operation on Dec. 1, 1918, or closely following that date. Had the company not been under the necessity of taking immediate steps in contracting, it is probable that better financial arrangements would have been made. It does not appear that the company made any general appeal, or offering of its securities in financing said additions. It appears of record that it did not make any effort to obtain the necessary funds locally, and it appears that large financial houses did not have opportunity to consider taking these securities, or, at least, did not have knowledge of the contemplated issues.

The commission is warranted in saying that but for the fact that said securities had been virtually contracted at 90 per cent of par, together with said other stipulations, a higher price than 90 per cent of par could have been obtained. There is a question as to how far a public service commission may go in trying to protect companies in the management of their corporate affairs when rates are not materially affected. The hesitancy of the commission to approve the issuance of securities at the original proposed price of 85 per cent or 86 per cent of par has already resulted in a possible saving to the company of $64,000 to $79,000, and but for conditions created and over which the commission has no control, this would have been raised to more than $100,000.

Under these unusual conditions, the commission will grant the prayer of the company with certain modifications. The company will be required to realize at least 90 per cent of the par value of said securities, together with any interest which shall have accrued between the date of said bonds and the date of sale. The company will be permitted to add, if necessary, to the discount to be allowed on the face of the bonds a small per cent, not to exceed 10 per cent, of the net increase in the company's earnings in the first year after the installation of said new coke ovens, that are derived from the operation of said new ovens, but not to include any part of net earnings from the operation of the remainder of its plants.

The commission will further permit, if it be necessary, the pledging of first and refunding bonds dated July 1, 1912, due July 1, 1942, but the commission desires to direct attention to the policy laid down in its order P. S. C. I. No. 3805, and accepted by the company, which provides that out of the returns from increase in rates granted the company is to amortize $650,000 excess costs of said installations, said $650,000 being, as shown by the record in the hearing of said cause, the abnormal cost of installation at this time. Said order provides that "petitioner shall thus reduce the capital charge of said added plant and equipment to a value of not more than $650,000, the same to be the value at which said added plant is to be carried on the books of the company, and at which it shall be valued in any formal rate proceeding." Said order does not contemplate, inasmuch as the con-

sumer is to pay a sufficient sum to write off permanently the excess cost, the issuance of any securities on said addition, above the amount of $650,000.

The commission being fully advised, finds that the value of the additions to be installed from the proceeds of the bonds herein authorized will be in excess of $1,250,000, and enters the following order:

It is ordered by the Public Service Commission of Indiana that the Citizens Gas Company, of Indianapolis, be, and it is hereby, authorized to issue and sell $1,500,000 par value of its general mortgage 7 per cent sinking fund gold bonds dated May 1, 1918, due $150,000 thereof May 1, 1920; $350,000 May 1, 1921; $450,000 May 1, 1922; $550,000 May 1, 1923; to be secured by a second mortgage upon all the property and assets of the company to such trustee or trustees as may be named by the company, and that as a part of such mortgage, said company may undertake and agree to deposit with the trustee or trustees thereunder, as additional security for the payment of the bonds now about to be issued, $650,000 of its first and refunding mortgage bonds dated July 1, 1942, and secured by a mortgage to the Bankers Trust Company and the Union Trust Company, of Indianapolis, trustees, as under the terms of said mortgage may be drawn down on account of improvements made with the proceeds of the bonds herein authorized and now to be sold.

It is further ordered by said commission that said general mortgage bonds herein authorized to be issued shall be sold by the company at the best price obtainable therefor, and at not less than 90 per cent of the par value thereof, with interest accrued to date of sale, provided that in addition to the discount of not to exceed 10 per cent allowed in the sale of said bonds, said company may contract and agree with purchaser or purchasers of said bonds to pay to them not to exceed 10 per cent of the profits for the year 1919, derived from the operation of the new coke ovens and equipment to be installed with the proceeds of the bonds now authorized, and for the purpose of determining what these profits are, the net profits of the year 1917 shall be taken as a standard, to wit, $290,155, and the net profits for the year 1919 shall be calculated in the same manner as the profits of $290,155 were calculated by the company for the year 1917, and if the said new ovens are not in operation by Jan. 1, 1919, the said net profits shall be calculated for the first twelve months of full operation. In determining such net profits there shall be charged against such profits the proper share for the year of the discount of bonds hereby authorized to be issued, and any amortization of the excess costs of the new plants which this commission may require to be written off in the year 1919. These things being considered and taken into account, then to the extent that the net profits then remaining exceed said net profits of 1917, namely, $290,155, such excess shall for the purposes hereof be considered as the increase in profits due to the installation of the new ovens.

It is further ordered that the discount allowed on said bonds shall be amortized over the life and years in proportion to the maturity of the bonds sold.

The funds derived from the sale of bonds hereby authorized shall be used for the purpose of defraying the expenses of installing the forty new coke ovens, by-product equipment and other improvements as set forth herein, and for no other purpose.

It is further ordered that the company shall pay to the State of Indiana a fee of 15 cents on each $100 par value of the $1,500,000 bonds hereby authorized, and upon the payment of such fee, the secretary of this commission is directed to issue a certified copy of this order to the company as due authority to do the things herein ordered.

Marshalltown Consumers to Pay Increased Rate—Increase to be Deposited in Bank Until Final Decision Is Announced

Consumers of gas in Marshalltown, Iowa, will receive gas bills from the Iowa Railway & Light Company at the company's new rates, the amount of the increase over and above the old rates to be impounded in some bank as trustee pending the final adjudication of the rate case now being litigated in court. The order enjoining the city from enforcing the old gas rates under the new ordinance has been signed by Judge Wade in the Federal Court.

The new rates, which the company is authorized to charge temporarily, are $1.40 net per 1,000 cu. ft. of gas for all amounts consumed within a month above 100 cu. ft. and not exceeding 3,500 cu. ft. The minimum bill will be 75 cents per month so long as the gas service remains connected. Above 3,500 cu. ft. the new rate will be $1.30 net per 1,000 cu. ft. for all amounts consumed above 3,500 cu. ft. and not exceeding 7,000; 7,100 to 10,000 cu. ft., $1.20 net; 10,100 to 20,000 cu. ft., $1.10; 21,000 to 50,000 cu. ft., $1 net. Whereas the old rate has been $1 per 1,000 cu. ft. net for all amounts consumed in a month with a 50-cent minimum charge. The new rates carry the same penalty of an additional charge of 10 cents per 1,000 cu. ft. if not paid on or before the discount date stamped on the bill.

Increased Rate Asked By Manufacturers Light & Heat Company

An application for an increase in rates for gas supplied has been filed with the public service commission at Harrisburg, Pa., by the Manufacturers' Light & Heat Company.

The increase asked is 5 cents per 1,000 cu. ft. The rate now prevailing is 32 cents; the new rate asked is 37 cents. The rate will become effective on June 1, according to the petition of the company.

A hearing will be arranged in the near future.

The company has been obliged to ask for an increase in rates because of the excessive cost of everything used by the company and the high price that has to be paid for labor.

Similar schedules have been filed for the company's Ohio and West Virginia consumers.

Rochester Experiences Difficulty in Securing Gas Coal

The Rochester (N. Y.) Railway & Light Company is making every effort to secure a supply of gas coal sufficient to avert a shortage in gas production next winter, but is having trouble in obtaining coal shipments. Herman Russell, assistant general manager of the company, says that at present there is only a supply of 11,000 tons on hand.

Liberty Company Wants Increased Rate Continued

The Liberty (Ind.) Gas, Light & Fuel Company has petitioned the public service commission for authority to continue in full force and effect a surcharge on its rates for service, authorized some time ago by the commission. The surcharge brings the total cost of gas supplied by the petitioner to $2 per 1,000 cu. ft.

The petition points out that consumers agreed to the war emergency rate of $2 per 1,000 cu. ft., after the company had showed them the dire need of such relief. The commission had authorized continuation of the emergency rate to June 1, 1918.

Holyoke Municipal Plant Increases Rates

The city of Holyoke (Mass.) Gas & Electric Department recently announced that, beginning June 1, the rate for gas will be $1.20 per 1,000 cu. ft., an increase of 20 cents over the present rate, and of 30 cents over the rate that prevailed at the opening of the war. The monthly reports of the gas works have shown that the margin between income and expense has been steadily growing each month until now the department is paying out about $1.20 for every 1,000 ft. and getting only a dollar for it.

The increase has been approved by the State gas and electric light commission. It makes it necessary to change the gears in more than 10,000 prepayment gas meters used in the city.

Reading Consumers Notified of Rate Increase

The Consumers Gas Company, of Reading, Pa., a subsidiary of the U. G. I. Company, of Philadelphia, announced an increase in the price of gas in the form of a ready-to-serve charge, to go into effect July 1.

A service charge of 25 cents a month will be made for three to five-light meters, which are the kind used by 75 per cent of the customers in Reading. A charge of 50 cents a month will be made on meters supplying ten, twenty and thirty lights; 75 cents a month on meters of forty-five to sixty lights, and all meters supplying 100 lights or more will be charged for at the rate of $1 per month, these charges being in addition to the charges for gas used.

E. E. Austin Elected President of Southern Gas Association

E. E. Austin, of Sumter, S. C., one of the younger members of the Southern Gas Association, May 23 was elected to the presidency of the association in the closing session of the body's annual convention at Chattanooga, Tenn. Mr. Austin has never before held an office in the association, but has been one of its most active members during the nine years he has given his attention to the gas business. He is manager of the Sumter Gas & Power Company, and formerly was engaged in similar work at Suffolk, Va.

Other officers were elected as follows: First vice-president, R. J. Titzel, of Birmingham, Ala.; second vice-president, Noble L. Clay, of Durham, N. C.; M. A. Bowlin, of Macon, Ga., re-elected secretary and treasurer. Board of directors: R. L. Marques, Birmingham, Ala.; Edgar Morris, of Washington, D. C.; J. W. Perkerson, of St. Petersburg, Fla.; E. E. Austin, Sumter, S. C.; H. D. Wilson, of Waycross, Ga.

The larger part of the morning session was devoted to a discussion of the serious fuel situation which, members of the association frankly admitted, constitutes one of the most feared menaces that has ever faced gas companies of the country. The following resolution, brought in by a special committee consisting of MacD. Dexter, H. D. Schall and James Ferrier, was adopted after discussion:

"Whereas, The Southern Gas Association, in convention assembled, at its tenth annual meeting in Chattanooga, May 22-23, has discussed the serious shortage of coal, coke and oil for the manufacture and distribution of gas for the coming year; and,

"Whereas, Present indications and past experiences indicate the impossibility of storing an adequate stock at the present time and for operations next fall and winter, when transportation and operating conditions will be still more acute; and,

"Whereas, The quality and preparation of coal is more essential for gas production than is any other industry where coal is used, not only for the recovery of by-products which are so essential to Government requirements; be it therefore

"Resolved, That the Southern Gas Association transmit this resolution to the gas and electric science committee of the Council of National Defense, through its chairman, W. J. Wheb, with the request that everything possible be done to secure for the gas companies of the South immediate and adequate supplies of coal, coke and oil for the coming winter; and be it further

"Resolved, That the Southern Gas Association herewith pledges its continued loyalty and support to the United States Government in all its activities for bringing the present war to a successful conclusion."

Delegates to the association appeared highly appreciative of the stand taken by President Wilson and Secretary McAdoo with reference to public utilities, and appeared to believe that their way would now be made easier with the public at large, so prone to criticize and find fault.

The convention adjourned this afternoon after decision had been announced that the next annual session would be held in Asheville, N. C. The delegates declared this to have been one of the most successful conventions in their history, notwithstanding the conditions brought about by war-times.

The following delegates were registered here for the convention: Edwin C. Strohart, Charleston Railway & Light Company; J. H. Robertson, North Carolina Service Company, Salisbury, N. C.; John D. Caldwell, Asheville Power & Light Company. Asheville, N. C.; R. E. Landers, Bristol Gas & Electric Company, Bristol, Tenn.; H. D. Wilson, Consumers Gas & Coke Company, Waycross, Ga., MacD. Dexter, Gas Light Company, of Columbus, Ga.; L. W. Jackson, Alabama Power Company, Anniston, Ala.; S. J. Canterbury, Meridian Light & Railway Company, Meridian, Miss.; C. J. Sapp, the Dayton Manufacturing Company, Dayton, Ohio; S. B. Russell, Parker-Russell Mining & Manufacturing Company, St. Louis, Mo.; H. D. Schall, Detroit Stove Works, Detroit, Mich.; C. M. Crawford, Greensboro, N. C.; R. J. Rolston, Welsbach Company, Philadelphia, Pa.; G. W. Bean, James B. Clow & Sons, Chicago, Ill.; L. G. Crenshaw, Parker-Russell Mining & Manufacturing Company, St. Louis, Mo.; John F. Parker, Rockford, Ill.; R. Litzel, United Gas & Electric Engineering Corporation, Birmingham, Ala.; Edgar Morris, Pittsburgh Water Heater Company, Washington, D. C.; Edmund S. Dickey, Maryland Meter Works, Baltimore, Md.; C. W. Wardell, Welsbach Company, Gloucester, N. J.; Frank Cavenagh,

Maryland Meter Company, Baltimore, Md.; E. V. Daily, James B. Clow & Sons, Chicago, Ill.; Louis Stotz, National Commercial Gas Association, New York; George Sligo, Ruud Manufacturing Company, Atlanta, Ga.; Vernon Baker, Russell Engineering Company, St. Louis, Mo.; F. L. Marshall, the Gas Light Company, Augusta, Ga.; J. D. Taylor, Asheville, N. C.; T. W. Colyer, Welsbach Company, Philadelphia, Pa.; H. L. Draper, Chambers Perfect Combustion Company, Birmingham, Ala.; Irwin Rawson, Russell Engineering Company, St. Louis, Mo.; Joe Carr, Rathbone-Sard & Company, Aurora, Ill.; H. H. Richman, Welsbach Company, Philadelphia, Pa.; James Ferrier, Atlanta Gas Light Company, Atlanta, Ga.; Alphonso Mason, Welsbach Company, Gloucester, N. J.; Jack Little, Michigan Stove Company, Detroit, Mich.; E. C. Falvey, Sprague Meter Company, Davenport, Ia.; H. D. Hughes, Birmingham, Ala.; M. A. Bowlin, Macon Gas Company, Macon, Ga.

Peoples Gas Company Will Be Compelled to Discontinue Service Unless Increased Rate Is Allowed

Unless allowed to increase rates, the Peoples Gas, Light & Coke Company, of Chicago, Ill., will be obliged to suspend operations. This statement was made this week by Samuel Insull, chairman of the board of directors of the company, testifying before the state public utilities commission. He declared that the company is so indebted to banks that it will be impossible to continue to supply gas unless other financial aid is forthcoming or the company is allowed to increase rates.

Mr. Insull appeared before the commission on the company's petition that the commission grant authority to boost present gas rates. Edward J. Ward, vice-president of the company, followed Mr. Insull. He read statistics showing how materials used in gas making had advanced in price.

"The gas company has but $600,000 cash on hand," said Mr. Insull, "and is drawing on this every day. It is not possible for the company to continue under present conditions. The company will be forced to discontinue unless its request for increased rates is granted."

He told of the difficulty the company had during the snowbound condition of the city last winter. He said that at one time the coal supply was so low that the gas pressure was reduced about 2 per cent. He said this was done without authority, but that it was better to reduce the pressure than to have to discontinue entirely.

The hearing was adjourned to June 7.

And We Always Thought Its Tendency Was to Go Up

The following, clipped from the Holyoke (Mass.) *Telegram*, is illuminating:

"Dust in Holyoke streets will be kept down this summer by the use of water gas, as has been the custom here for the past twelve years. The product comes from the municipal electric and gas department, and has given general satisfaction in the past. The suggestion that Holyoke might follow Providence's example and try water gas quite amused officials of the board of public works this morning, as the product is not an innovation here.

"Heavier road oils have been used to some extent in the past, but water gas has been commonly used. The city takes all the water gas the municipal electric and gas department can furnish. Heavier road oils are becoming harder to obtain, but this is not worrying the local officials, as they will continue to use the gas plant by-product in the future as in the past."

Consulting Engineer of Cincinnati and Wife Killed by Speeding Train and Children Injured

Charles R. McKay, consulting engineer for the Union Gas & Electric Company, Cincinnati, Ohio, and for many years general manager of the Union Light, Heat & Power Company, of Covington, and his wife were instantly killed and their two children badly injured when a Pennsylvania flyer struck the auto in which they were riding at the Red Bank crossing, Tuesday evening, May 14, about 5.25 o'clock.

Mr. McKay and his family were returning to the city from a spin in the country before dinner. As they reached the railroad crossing they were stopped by the flagman to allow an eastbound train to pass. After the train had passed they attempted to cross the tracks, notwithstanding the frantic efforts of the flagman to stop them, not seeing the oncoming westbound fast express on the opposite track.

As they reached the center of the tracks the fast-moving train struck the machine, hurling it some distance, and demolishing it completely. The occupants of the car were scattered in all directions.

Mr. McKay sustained a fracture of the skull, internal injuries and both arms and legs were broken. He died a short time afterward. Mrs. McKay was instantly killed, her head being crushed. Their two children are in the General Hospital in a serious condition.

Increase Sought by Cedar Rapids Company

Claiming that it cannot possibly make gas for 90 cents per 1,000 cu. ft., and giving figures to prove the statement true, the Cedar Rapids (Iowa) Gas Company made application to the city council for permission to raise its rate 10 cents per 1,000 cu. ft. If the request is granted the rate for gas hereafter will be $1 per 1,000 ft. instead of 90 cents.

Ordinance Introduced to Make the Gas Litigation Committee a Standing Committee of Chicago Council

The Chicago City Council reversed itself in the quarrel between Corporation Counsel Ettelson and Special Attorney Donald R. Richberg for control of the prosecution of the $10,000,000 suit against the Peoples Gas, Light & Coke Company, by overriding a veto of Mayor Thompson and reappointing Richberg, May 20.

Friends of Richberg saved the day for him by the contention that the issue was one of deciding whether the Mayor or city council had the power to say who would represent the city in the extended litigation.

This brought a vote of 52 to 15, the minority roughly representing the aldermen who usually vote with Mayor Thompson and the majority those who follow the "home rule" for public utility matters slogan.

Despite the action of the city council, Corporation Counsel Ettelson is expected to contend that his position carries with it the power to hire and discharge attorneys representing the city in corporate legal matters, and that the power of the city council is limited to that of recommendation.

The action taken by the city council was of a temporary nature, directing Richberg to proceed with the case and instructing Corporation Counsel Ettelson not to interfere.

An ordinance was also introduced, however, placing Richberg in his former position as special attorney. Action on it will probably be taken at the next meeting of the council.

Another sign that the gas litigation has fallen into political ways was the introduction of an ordinance to make the gas litigation committee a standing committee of the council.

This, if passed, will place the power to appoint the body, which has been in the hands of the Mayor, with the city council.

Ordinance on Gas Fittings Passed by Brockton Council

An ordinance entitled "Regulating Gas Fittings in Buildings in the City of Brockton, Mass.," was passed by the city council April 18, as follows:

Section 1. All gas pipes shall be of the best quality of wrought iron or steel of standard iron pipe sizes.

Sec. 2. All fittings shall, except as otherwise required, be of full weight malleable iron.

Sec. 3. Defective pipe or fittings, or pipe or fittings repaired or calked with cement, lead or any other material, shall not be used.

Sec. 4. Bushings shall not be used except at meter connections.

Sec. 5. Unions shall not be used in piping that is concealed from view.

Sec. 6. All piping shall be free from burrs or other obstructions installed without trapping and graded downward to the risers or towards a drip that will carry off all condensation.

Sec. 7. Pipe joints material shall be applied to the male threads only. Gasfitters' cement shall not be used.

Sec. 8. Acids or alkali shall not be used to tighten or used in making up joints.

Sec. 9. No pipe shall support any weight other than a meter or fixture, nor be subjected to any undue strain. All meters shall be supported by proper brackets or shelves.

Sec. 10. Where an extension is made the pipe shall be connected at a point where full size can be maintained. No pipe extension shall be made from a pipe of a smaller size.

Sec. 11. All piping installed in a building of the dwelling-house type shall be in accordance with the following table:

Size of Pipe	Feet of Pipe Allowed	Number of ¾ Outlets Allowed
⅜-in.	30	2
½-in.	40	4
¾-in.	60	10
1-in.	70	15
1¼-in.	100	30

Sec. 12. All piping installed in a building other than the dwelling-house type shall be in accordance with the following table:

Size of Pipe	Feet of Pipe Allowed	Number of ½ Outlets Allowed
½-in.	30	1
¾-in.	60	8
1-in.	70	12
1¼-in.	100	20
1½-in.	150	35
2-in.	200	50

Sec. 13. All piping installed in a building to supply a gas engine shall have a separate independent street service and shall be in accordance with the following table:

Horsepower	Size of Pipe	Feet of Pipe Allowed
1 to 7	1-in.	100
8 to 12	1¼-in.	100
13 to 22	1½-in.	100
23 to 36	2-in.	100
37 to 50	2½-in.	100
51 to 100	3-in.	100
101 to 150	4-in.	200

Where the length of pipe installed is in excess of the requirements of the foregoing table the size of pipe shall be increased one size for every time the required length is increased 100 per cent or any fraction thereof.

If a separate independent service is not practicable, other means of properly equalizing the pressure must be made.

Sec. 14. All piping installed shall not be smaller than the following minimum sizes:

	Minimum Size of Pipe
Any pipe	¾ in.
Drops from ceiling over 20 ft. above floors	½-in.
Drops from ceiling in any store	½-in.
Gas range connections (minimum)	¾-in.
Any pipe in a store	¾-in.
Any pipe for a building service	1-in.
Any underground pipe	1¼-in.

Sec. 15. All piping shall be securely screwed and fastened to woodwork by hooks, straps or pipe hangers.

Sec. 16. All piping shall be secured to brick or stone walls by fastening it to wooden plugs, driven into the wall or to metal expansion plugs imbedded therein.

Sec. 17. All piping shall be secured to concrete or tile walls or ceilings by straps, hooks or pipe hangers fastened to the wall or ceiling by expansion bolts or substantial metal inserts.

Sec. 18. Every pipe passing through a masonry wall (except an outer foundation wall) shall be encased and left resting on the bottom of the casing with a clearance above of at least ½ in.

Sec. 19. The casing required by the preceding sections shall consist of tile or full weight iron pipe, in one piece, extending the full thickness of the wall.

Sec. 20. Gas pipes may be let into the timbers, beams or girders, but timbers, beams or girders shall not be unduly cut, or cut in violation of the building ordinance of the city of Brockton.

Sec. 21. When a building is to be connected to a gas main, the service must be separate and independent.

Sec. 22. Every street service within the fire limits shall have a shutoff outside the building accessible at all times in case of fire. Every street service that is larger than 1½ in. in diameter shall have a shutoff outside the building accessible in case of fire.

Sec. 23. Every street service entering any building shall be thoroughly cemented on the face of the wall with Portland cement.

Sec. 24. Every street service shall be moved or changed whenever a building or an addition thereto is constructed in such a manner as to cover or make it inaccessible.

Sec. 25. Every building service shall be graded in a downward direction to the street main, or provided with a suitable drip where it is impossible to drain towards the main.

Sec. 26. Every exposed building service shall be covered with mineral wool or steam-pipe coverings, properly boxed in and made secure against freezing.

Sec. 27. A straight way brass shut-off shall be installed on the inlet side of every meter within the building and another shut-off on the street service close to the foundation wall; but if the pipe is larger than 2 in. an iron valve with a Babbit or other non-corrosive metal seat may be used.

Sec. 28. Every meter located in any cellar or basement shall be situated wherever possible, in a light place near the front wall at least 4 ft. above the floor and with an unobstructed passage leading thereto.

Sec. 29. No gas meter shall be placed underneath any stairway, bulkhead, showwindow, stoop, sink or lavatory, over any water-closet fixture, in any horse-stall, bedroom, coal-bin, or wood closet, within 3 ft. of an electric cut-off box or service switch, or within 8 ft. of any boiler or furnace or smoke pipe.

Sec. 30. Every meter connection shall be of standard iron pipe or of brass pipe of iron pipe size. No lead pipe shall be used in such connection.

Sec. 31. Every vertical riser in a building shall be equipped at its lower end with a tee, having a full-sized opening looking down. Such tee shall be fitted with nipple and cap.

Sec 32. No riser shall be placed within 3 ft of a vestibule partition, electric cut-out box or service switch, or distribution panel, or within 2 ft. of an outside wall, or in the same recess with water or soil pipes.

Sec. 33. Every branch shall be taken from the side or the top of any running line.

Sec. 34. Side outlets for brackets shall be firmly secured at a right angle to the wall and shall project the proper distance from the finished wall.

Sec. 35. Every drop outlet in a building shall project from the finished ceiling the proper distance for fixture hanging or pipe extending.

Sec. 36. No swinging or folding bracket shall be placed against any stud partition or woodwork. No gas bracket on any woodwork or lathe and plastered wall or partition shall be less than 5 in. in length, measured from the burner to the plaster or woodwork Such bracket shall be at least 2 in. from any wooden casing of any door or window.

Sec. 37. Every gas range, gas water heater or other stationary appliance shall have a rigid pipe connection. Portable appliances may be connected by flexible tubing if there is no shut-off on the appliance.

Sec. 38. No independent connection for a flexible tube outlet shall be placed above the stiff joint on any chandelier or pendant.

Sec. 39. Every outlet shall be securely closed with an iron cap or plug until its fixture or appliance is installed.

Sec. 40. Every fixture, appliance cork and key shall have stop-pins screwed in place. Every fixture and bracket shall have "Boston" keys.

Sec. 41. All piping shall be inspected and tested by an inspector appointed by the Brockton Gas Light Company, and on his acceptance of the work shall be "tagged" at the front service pipe with tag, naming owner, location, date, number of outlets and name of inspector.

Sec. 42. After all fixtures have been installed the test required shall be as follows: ¼ lb. pressure to the square inch as indicated by a column of water 6 in. high, sustained for at least five minutes without dropping. Inspection of this test is to be made by an inspector or agent of the Board of Health and on acceptance the pipe shall be "tagged" with data of test.

Sec. 43. Spring gauges shall not be used for inspection purposes. Water or liquid shall not be used in the pipes for testing purposes.

Sec. 44. No gas company shall set a meter or supply gas to any system that requires a test until the provisions of Sections 41 and 42 are complied with.

Sec. 45. The provisions of these tests shall not apply to the operations of any gas company upon its own premises or to its mains or service pipes.

Sec. 46. No person shall construct, extend or alter any system of pipes for the conveyance, distribution or use of gas for illuminating purposes, or install gas fixtures in any structure without a written permit from the inspector or agent who is appointed by the Board of Health.

Sec. 47. All permits shall be void unless operations thereunder are commenced within thirty days after the date of the permit, or if the operations thereunder are discontinued for a period of more than ninety days.

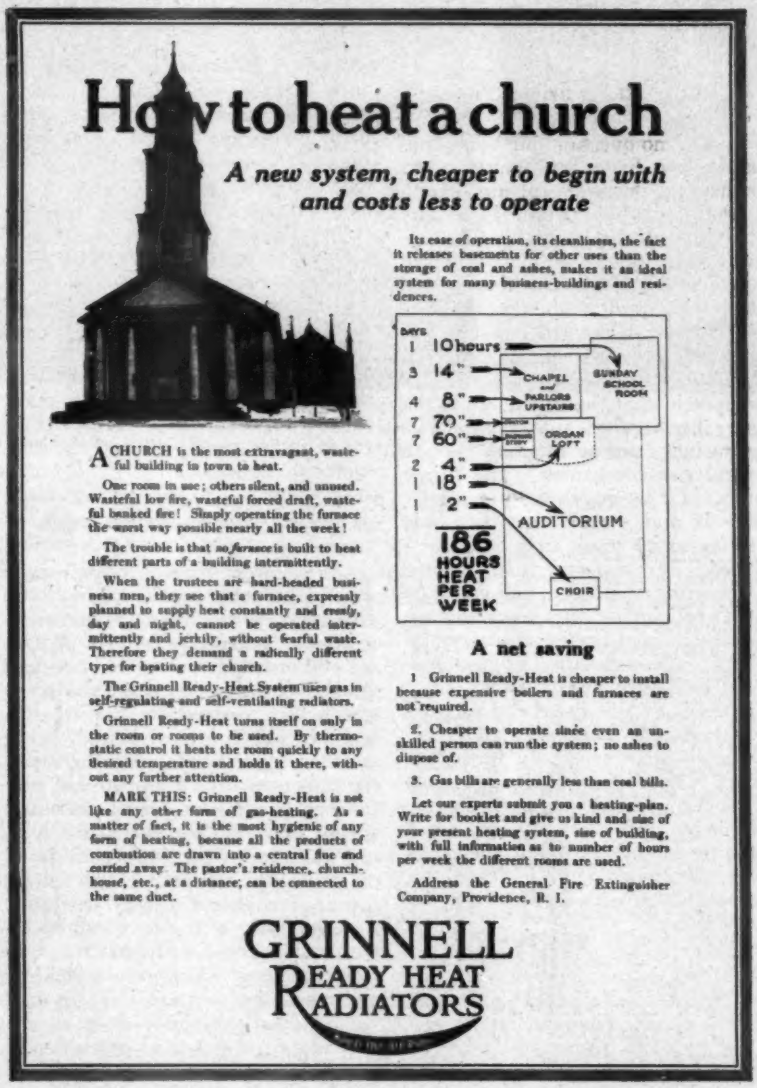
Sec. 48. None of the provisions of this ordinance shall apply to installations made previous to its passage.

Sec. 49. Every gas range having an integral oven or enclosed broiler and every water heater shall be properly connected to the nearest chimney or smoke pipe by a pipe of suitable size.

Gas Heating System Manufacturer Makes Effort for Church Heating

The accompanying illustration is a reproduction of an advertisement the General Fire Extinguisher Company, of Providence, R. I., is running in periodicals with national circulation devoted wholly or partly to religious work.

The company, as revealed in a booklet it has published, "How to Heat a Church," has met with gratifying success in heating various churches by its new Grinnel Ready Heat Radiators, and is going after church heating business on an ambitious scale.


How to heat a church
A new system, cheaper to begin with and costs less to operate
A CHURCH is the most extravagant, wasteful building in town to heat.
One room in use; others silent, and unused. Wasteful low fire, wasteful forced draft, wasteful banked fire! Simply operating the furnace the worst way possible nearly all the week!
The trouble is that no furnace is built to heat different parts of a building intermittently.
When the trustees are hard-headed business men, they see that a furnace, expressly planned to supply heat constantly and evenly, day and night, cannot be operated intermittently and jerkily, without fearful waste. Therefore they demand a radically different type for heating their church.
The Grinnell Ready-Heat System uses gas in self-regulating and self-ventilating radiators.
Grinnell Ready-Heat turns itself on only in the room or rooms to be used. By thermostatic control it heats the room quickly to any desired temperature and holds it there, without any further attention.
MARK THIS: Grinnell Ready-Heat is not like any other form of gas-heating. As a matter of fact, it is the most hygienic of any form of heating, because all the products of combustion are drawn into a central flue and carried away. The pastor's residence, churchhouse, etc., at a distance, can be connected to the same duct.
Its ease of operation, its cleanliness, the fact it releases basements for other uses than the storage of coal and ashes, makes it an ideal system for many business-buildings and residences.
DAYS
1 10 hours
3 14"
4 8"
7 70"
7 60"
2 4"
1 18"
1 2"
CHAPEL and PARLORS UPSTAIRS
SUNDAY SCHOOL ROOM
ORGAN LOFT
AUDITORIUM
CHOIR
186 HOURS HEAT PER WEEK
A net saving
1 Grinnell Ready-Heat is cheaper to install because expensive boilers and furnaces are not required.
2. Cheaper to operate since even an unskilled person can run the system; no ashes to dispose of.
3. Gas bills are generally less than coal bills.
Let our experts submit you a heating-plan. Write for booklet and give us kind and size of your present heating system, size of building, with full information as to number of hours per week the different rooms are used.
Address the General Fire Extinguisher Company, Providence, R. I.
GRINNELL READY HEAT RADIATORS

Wants Natural Gas Companies to Go Into Appliance Merchandising Business

(*Continued from page* 519)

to keep on their lines the heating consumption during the periods when they are able to supply the same. Further than this, there is the investment to take care of the consumer. There has already been expended a certain amount of money which might be classed under the head "cost of attaching business." This investment will have been in vain (insofar as the future is concerned), unless some steps are taken to hold the heating business at least 70 to 80 per cent of the possible 200 heating days in climates like that of Cleveland and Pittsburgh, and the gas companies are able to supply a sufficient amount of gas to their consumers from 85 to 95 per cent of that time.

Consumers' Preference

There is no question but what consumers who have used natural gas for heating purposes for any length of time certainly prefer it to any other kind of fuel, and for this reason it seems that, if properly advised and the type of appliance suggested which will permit of the use of a substitute fuel during the periods of shortage, as, for instance, coal or oil, without causing any great inconvenience in changing from one to the other, the larger portion of the heating business can be retained for the natural gas companies. The prime object of this paper is to suggest methods and means by which this most essential result may be accomplished. Few consumers, in the face of recurring shortages, will continue with favor the use of gas-burning appliances in coal-heating furnaces or boilers. The installation of gas burners in such furnaces or boilers, once so extensively advocated and adopted by natural gas companies and their consumers alike, especially during the earlier years of bountiful supply, are no longer adequate to meet the requirements of the changed and changing conditions, due to the cause above mentioned, and indicated by the periods of shortage during the past winter.

There are two general methods of centralized house heating—that is, with warm-air furnaces and with boilers—either steam or hot water. Of the two, the former method is by far the most common and will be discussed in greater detail.

There are two general types of warm-air furnaces used for heating with natural gas—coal furnaces with gas burners, and straight gas furnaces—and neither used alone will meet the present situation.

The Burners in Furnace

If good burners are used in a coal furnace a thermal efficiency of from 30 to 50 per cent can be obtained. When a man removes them during the first cold snap they usually stay out of the furnace until the cold weather is over for the year. Then perhaps they are again installed, consequently the gas company loses most of that man's heating business; as the possibility (which often resolves itself suddenly into a necessity) of personally enduring the dirt and discomfort of removing, and later on replacing, gas-burning appliances in such furnaces or boilers, or hiring a gas fitter to do so, is not contemplated with any degree of satisfaction. It is an irksome duty and an expense which will not be relished or endured very long. It must and will result ultimately in the adoption of coal for the entire winter season, unless some adequate means as is herein suggested are generally adopted.

If burners are made that are easy to remove, or so they do not have to be removed, as, for instance, the common ring burners as used in many so-called combination furnaces, the gas bills are very high and the consumer dissatisfied.

Difference in Efficiencies

On the other hand, a coal furnace with a straight gas furnace as an auxiliary, or vice versa, is known to work out satisfactorily. By providing the consumer with a two-fuel system, such as described above, he will have a dependable heating system which will be satisfactory in all weather conditions. Furthermore, the consumer thus equipped will continue to use gas during fall and spring, and likewise during the winter, except during these periods of extreme weather, where the substitution of coal is distinctly desirable. A consumer will provide himself with sufficient solid fuel to carry him over the time when gas is lacking, and when the shortage is at an end, will automatically go back to gas on account of the increased convenience. Furthermore, a man thus equipped will have a very efficient heating arrangement. He has a gas furnace which has an efficiency of from 60 to 85 per cent, and also a means of burning coal efficiently, and his fuel bills will be consistent with the size of house heated and the weather conditions.

In case the coal furnace, because of being worn out, has to be entirely removed, or in a new home, a two-fuel furnace containing two heating units in one answers the same purpose as the two units—that is, the coal furnace and the auxiliary gas unit. The gas unit, it is readily understood, should have the long fire travel needed for gaseous fuel in order that the proper efficiency can be had, while the coal unit should have a sufficient large fire pot and a much shorter travel.

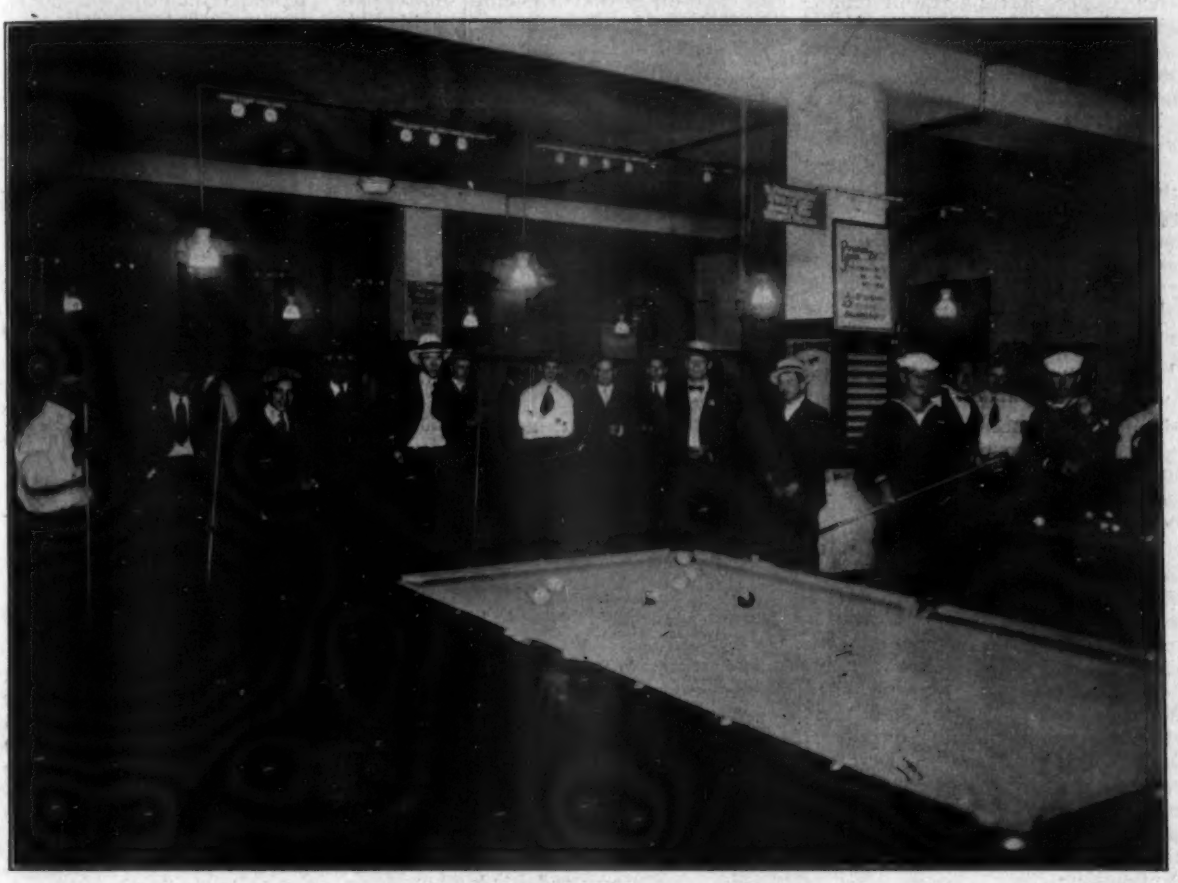
Work That Will Have to Be Done

It will take much advertising, soliciting, and perhaps require the formation of a new department by the gas companies to induce people to make the extra outlay necessary to have a heating arrangement that will keep their houses warm, and still make it possible for the gas companies to sell their maximum amount of gas.

In order to see to it that the consumer gets an adequate and efficient appliance, it seems almost certain that the natural gas companies will have to do what the artificial companies have done for years; that is, they will have to handle the appliances which they want the consumer to use, and make offers which will be attractive enough to the consumer to make him want to spend the extra money necessary to give him a two-fuel heating system.

If the desired results are to be had in connection with cutting off the peak load by the introduction of auxiliary appliances, it will not be possible to leave the matter in the hands of the dealers. The gas companies themselves will have to take up the burden in order to get prompt results. Where a dealer might sell one appliance at a price that will give him a fair return upon his investment, the gas company, by eliminating this feature and instituting a partial payment system, must sell a great many times this number. It can only be done by eliminating all profit and instigating a well-defined and generous advertising campaign, together with personal solicitation on the part

The Pool Room as This View Attests Represents an Opportunity to Demonstrate the Effectiveness of Gas Lighting



ESTABLISHMENT AT LONG BEACH, CAL., USES WELSBACH REFLEX LIGHTS AND ALABASTER SHADES IN ITS LIGHTING INSTALLATION—THE BUSINESS IS ON THE LINES OF THE SOUTHERN COUNTIES GAS COMPANY

of the gas company's representatives, properly trained and educated, so that they may give the consumer all the facts and figures in connection with the installation of these appliances; and behind all this, the company's recommendation as to the desirability from the consumer's standpoint of the appliances.

Objections to Companies Handling Appliances

There will, of course, be objections raised by a great many as to the desirability of companies handling appliances.

1. The fear of prejudicing the dealers who handle furnaces. The dealers seldom, if ever, advertise or solicit the sale of furnaces, and as the auxiliary furnace is not well known to the public, it would mean an entirely new field for the dealers, necessitating much advertising, which in most cases they have neither the money nor the inclination to do.

2. Fear of increasing the consumption of gas rather than checking it. It is not for the purpose of increasing, but rather retaining and decreasing each individual bill that the gas companies should engage in the sale of auxiliary furnaces. If the majority of consumers had a two-fuel heating system they would all adjust themselves to using natural gas when available, and some other solid fuel when the gas supply is insufficient, the actual number of such furnaces would have no effect on the supply excepting that all the gas that could be supplied at an adequate pressure would be used.

3. Fear of damage claims. Damage claims are an unavoidable evil which the large artificial gas companies have been able to contend with —why not the natural gas companies?

4. The investment required. Undoubtedly a considerable investment would be required, but in the end the cost would be repaid in the increased good will, and constant peak sales. The consumer will most certainly revert to coal or some other fuel permanently if the shortage experienced last winter keeps up, and he is not shown some way of providing himself with a heating system where gas and some other fuel can both be used.

Kerosene as an Auxiliary

Auxiliary boilers for steam and hot-water heating systems should be given the same attention that the warm-air furnaces get. Here, as in the use of warm-air furnaces, a gas boiler can be made auxiliary to a coal boiler, or vice versa, and when the

supply is sufficient the gas boiler will be in use on account of the greater convenience. Here a readily removable kerosene burner might be of some value, as the average consumer that has hot water or steam heat in his home is generally equipped to provide for storage of kerosene or fuel oil.

One thing is absolutely necessary, that is, the consumer gets the best appliance for his money. Before a campaign to persuade him to install auxiliary furnaces is started, the gas company should assure itself that the appilances they are advertising are the safest, most efficient and strongest that can be had for the price. The various auxiliary furnaces on the market that appear to be of value should be examined and in some manner graded as to efficiency, price, etc., and the one showing the greatest merit should be the one recommended and sold.

In this connection, we must not, of course, overlook the industrial consumer, as during the summer months he is the all-important one, insofar as the natural gas companies are concerned. Several years ago, a number of natural gas companies had sufficient gas to supply both their domestic and industrial consumers. Most companies, however, were obliged to shut off the gas supply for industrial use last winter, and it is only a question of time when all natural gas companies will be obliged to do the same.

In order to supply the consumer with gas under the changed conditions, industrial consumers must be equipped, as should be the domestic consumers, to substitute oil or coal for gas by means of dual equipment without retarding their production, so that they can change from gas to oil on their forging furnaces, core ovens or melting furnaces, by merely shutting off the gas valve and turning on the oil valve.

Gas Engines Adaptable to Different Fuels

Manufacturers using gas engines should have their plants equipped with carburetors so that they can use liquid fuel or with gas producers, so that they can use producer gas during the extremely cold days in winter. Just which equipment they choose depends largely on local conditions and on the capacity of their plant. If the gas engine plant is large and the shut-off periods are of long duration, producer gas plants should be installed. If the plant is small and the shut-off periods of short duration, the carburetor equipment should be installed. No matter which fuel the industrial consumer uses as a substitute for natural gas, he will find in summing up his year's fuel cost for gas engines, that he has saved money by using natural gas when available over what the cost would have been, had he used another fuel entirely.

Gas companies should exert every effort to retain the industrial business during the summer months when the domestic consumption is light. This can be done only by co-operating with industrial consumers to the fullest extent, by advising them in the spring of the year, just what they may expect and what they must prepare for during the coming winter, by telling them how to equip their plants to the best advantage, and, if necessary, where to obtain their equipment.

In advising the industrial consumer, just as much care should be taken as in the case of the domestic consumer, that he be equipped with the best possible dual equipment. However, as a great many of the larger consumers have men that are well versed in the use of various fuels for their individual problems, the matter of assisting them will be a simple matter.

Summing up, the consumer must be told very clearly and frankly how the situation lies, what must be done by him to make it possible to use natural gas the greatest portion of the time, and still have a convenient and economical way of heating when natural gas is not available, and how he intends going about getting the appliances that he needs. If that is done, the gas companies will find that they will be able to hold this part of their heating business and also improve their operating conditions.

Big Gas Well Near Van Buren

The biggest gas well that has ever been brought in in the Kibler field, near Van Buren, Ark., was shut in on the John B. Brown farm by the Wild Cat Gas & Oil Company, of Fort Smith. The well is said to be good for 4,000,000 ft. of gas and is but 1,343 ft. deep. This is the company's No. 12.

The only other shallow-sand producer in the field is the same company's well on the Jackson farm, three-fourths of a mile north of No. 12, which made 3,000,000 ft. The gas in the Jackson farm was found at a depth of 1,473 ft.

The sand in the Brown well was picked up at 1,250 ft. and began producing at 1,278 ft., or 130 ft. nearer the surface than the Jackson well.

An unusual formation marked the Brown well from the time it spudded in on April 4 until the well was shut in. The formation is unlike any well ever drilled in Crawford County. The drilling was hard throughout. More than 300 ft. of very hard limestone was found in the Brown well. This is the largest showing of limestone ever made in western Arkansas, and there is some question as to whether or not this limestone has not successfully served as a barrier enclosing a reservoir of gas that has never been tapped before.

Higher Rate for Gas Denied Albany Municipal Plant

The public service commission, at the conclusion of the hearing on the application of the Municipal Gas Company for permission to increase its rates on an average of 30 cents per 1,000 cu. ft., dismissed the petition on the ground that the law passed in 1907, which limits the maximum price of gas in Albany to $1 per 1,000 ft. is binding upon it.

Temporary Rate Increase Granted Appleton Company

Appleton, Wis., people will pay an increase of 20 cents for gas per 1,000 cu. ft. This was granted by the Wisconsin Commission to the Wisconsin Traction, Light, Heat & Power Company following an investigation by the rate commission.

The new rate will start from April 1 and continue for six months, after which the rate will again be restored to the original rate, unless the company can show why the new rate should continue in effect.

Following is the new schedule as provided by the rate commission:

	Gross	Net
First 5,000 ft.....	$1.45	$1.35
Next 15,000 ft.....	1.30	1.20
Next 30,000 ft.....	1.20	1.10
Next 50,000 ft.....	1.05	0.95
Over 100,000 ft.....	0.95	0.85

Societies and Associations

THE HARRISBURG (PA.) GAS COMPANY employees of the commercial department held the monthly meeting of the department May 14 at the offices, 14 South Market Square, with the president, William German, presiding. A special and interesting feature of the program was a talk by Wareham S. Baldwin, superintendent of the company, on the construction and operation of the gas meter. Mr. Baldwin advocates the consumer understanding the operation of the meter and everyone discussed phases of the talk. The annual picnic of the association has been declared off for this summer.

THE NEW ENGLAND SECTION OF THE NATIONAL COMMERCIAL GAS ASSOCIATION held its final meeting at the City Club, Boston, May 24. The association will be merged with the American Gas Institute at a convention in New York, June 6. For the interim officers were elected as follows: J. C. D. Clarke, president; Charles T. Aaron, vice-president; C. J. Connell, secretary-treasurer. U. U. Dearborn, of Waltham, related experiences as ambulance driver with the American Field Volunteers Ambulance Corps at "Red Pepper Hill," near Verdun. Retiring President Fred K. Wells presided.

THE BROCKTON (MASS.) GAS LIGHT COMPANY EMPLOYEES' BENEFIT ASSOCIATION at a recent meeting made a change in the by-laws of the association so that the women employees of the company could join. President William P. Morton presided. It was voted to omit meetings during the summer, and the association adjourned until Monday, Oct. 14.

THE PHILADELPHIA SECTION OF THE NATIONAL COMMERCIAL GAS ASSOCIATION held the monthly meeting May 21, which was presided over by President W. G. Murfit, at Thirteenth and Cherry Streets, in place of the usual order of business unusual and most timely features were introduced. The principal speaker was Sergt. A. R. Baldock, one of the First Hundred Thousand and a survivor of the original "Princess Pat" Canadian Battalion, which entered the engagement at Ypres.

Personal Notes

GEORGE B. EVANS, manager and chief engineer of the Laclede Gas Light Company, St. Louis, Mo., has been appointed general manager, effective June 1. He has been with the company since 1903. C. L. Holman, president of the company, has been acting as general manager. Increased business and patriotic activities are so heavy that Mr. Evans has been appointed to relieve Mr. Holman of all duties of the operating department.

JAMES W. DUNBAR, assistant to the president of the United Gas & Electric Company, New Albany, Ind., and for many years secretary of the Indiana Gas Association, resigned his position at New Albany and will run for Congress in November. He has been Grand Master of Masons in Indiana.

JAMES W. DUNBAR

EDWARD C. MEIER, president of the Heine Safety Boiler Company, died May 7 at Philadelphia, Pa. He was born at Wyandotte, Kan., April 28, 1870.

O. E. HINES, formerly connected with the Washington (Ohio) Gas & Electric Company, is the new manager of the Boonville (Mo.) Light, Heat & Power Company.

R. O. JASPERSON, a former Milwaukee newspaperman, will succeed Guy F. Gregg as sales manager of the Milwaukee (Wis.) Gas Light Company, June 1. Mr. Jasperson has been connected with the gas company for the last five years as advertising manager.

GUY F. GREGG, who has been connected with the Milwaukee (Wis.) Gas Light Company since 1905, has resigned as sales manager to take effect June 1. He will become identified with Morris F. Fox & Company, stocks and bonds, of which Mr. Gregg has been elected vice-president. Prior to his connection with the gas company Mr. Gregg was with the Milwaukee road for nineteen years, the last twelve of which he was contracting freight agent. Mr. Gregg was president of the Milwaukee Athletic Club in 1913 and 1914, and has been one of the prime movers in the project of building a new club house, being a member of the building committee from the beginning. He is also secretary of the Blue Mound Country Club and treasurer of the Western Golf Association and of the Wisconsin State Golf Association. Mr. Gregg went to the Milwaukee company in 1905 as a coke salesman, and worked his way to the head of the sales force, and as general sales agent has earned the title of the "best known man in Milwaukee."

DR. W. D. LYNOT, formerly safety and welfare expert for the principal companies in the Joplin zinc mining district, has been secured by the Empire Gas & Fuel Company. He will remove to Bartlesville, where he will be in exclusive charge of similar operations.

JAMES R. MACCOLL has been elected a director on the board of the Providence (R. I.) Gas Company, to fill the vacancy which was left unfilled at the time of the annual meeting.

W. E. FROOM, for the past fifteen years associated with the Peoples Gas, Light & Coke Company in Chicago, Ill., has recently resigned his position and is now connected with the Pocatello (Idaho) Gas & Power Company. Mr. Froom will have charge of the new business department, and his long experience with the Peoples company will make him a valuable addition to the Wm. A. Baehr property. Mr. Baehr is a

great believer in his commercial departments, and the old saying, "the best is none too good," holds true in this particular case.

ALBERT HARRINGTON, SR., engineer of the Port Huron (Mich.) Gas & Electric Company, died May 15 from shock and heart failure.

THE FREEPORT GAS COMPANY, Freeport; capital stock, $50,000. Incorporators: C. A. Jones, P. G. Maercky and W. T. ANDREWS.

Citizens Gas Company of Sheffield is Sold to Interior Oil and Gas Company

By a deal closed May 16, but which has been pending for some time past, the Citizens Gas Company, of Sheffield, Pa., disposed of its holdings to the Interior Oil & Gas Company for $65,000. The company had some important gas holdings and also owned a gasoline plant in the village of Sheffield.

Five wells were held on town lots in the village, and these, with gas secured from the leasehold of the Blair and Campbell property at Donaldson, below Barnes, and gas secured from Martin's Station and Henry's Mills and other sources, furnished a goodly supply. The company also owned some pipe line and had the east side of Sheffield well piped.

Construction Notes

Brenham Gas Plant Sold

The Brenham, Texas, gas plant was sold recently on foreclosure proceedings from the United States District Court at Austin, under the direction of D. K. Woodward, Jr., special master. Charles L. Brooks, of Ann Arbor, Mich., purchased the plant for the bondholders. The plant will be placed in first-class shape and all necessary extensions will be made.

Extensive Repairs Being Made At Danville

The Commonwealth Power, Railway & Light Company, Danville, Ky., is arranging to make extensive repairs in the local plant. Material which was ordered in the early fall of 1917 has recently arrived.

Steel Corporation to Install Additional Ovens

It has been recently announced that H. Koppers Company are to build two more batteries of by-product ovens for the plant of the Steel Corporation at Clairton, Pa. This will give the Steel Corporation a plant of 748 ovens, which when completed will be the largest by-product coke plant in the world.

The plant of the Illinois Steel Company at Gary, Ind., which has recently added 140 Koppers ovens to its original installation of 560 ovens, is at present the largest by-product coke oven plant in the world.

People's Company Will Move Into New Quarters About June 20.

The People's Gas & Electric Company will occupy the new offices on Jefferson Street, in the Mellinger Block, Burlington, Iowa, about June 20. The rooms formerly occupied by the Ozark Theater are being transformed into several rooms, which are to be used for office, private office, storage room, showroom, etc. The interior will be modern in every respect, especial attention having been given to ventilation and lighting. An immense plate glass front is surmounted by separate windows with ventilators and special glass that helps the illumination of the rear of the rooms. A big skylight and ventilators at the rear and in the middle of the rooms will help make it a most comfortable place for the employees.

New By-Product Plant to be Constructed At Fairmont

Recent announcement has been made in the papers of the incorporation of the Fairmont By-Product Corporation, of Fairmont, W. Va. This company has been formed to build and operate a by-product coke plant. A contract has been given to H. Koppers Company for the construction of a plant to consist of 110 ovens, with necessary boiler plant and accessories. The plant will produce ammonium sulphate and pure toluol for Government purposes and tar and benzol for general industrial use. The plant will also deliver a large amount of coke-oven gas to relieve the shortage of natural gas in the Fairmont district. An attractive site has been selected near Fairmont, and a number of houses will be built for employees of the plant.

Twin State Company to Construct Two Story Building

The Twin State Gas & Electric Company is to construct a building, two stories, 26 x 40 ft., near the Rochester Foundry & Machine Company, on Wallace Street, Dover, N. H., in the near future, the building to be utilized as a substation, and will also have a repair shop connected. The building will have concrete floors and there will be a tenement in the building which will be occupied by the person employed there in charge. Miles H. Dustin has been awarded the contract to construct the building and the work will be commenced in the near future.

Plant to be Extended At Fitchburg

The Fitchburg (Mass.) Gas & Electric Light Company is to build another addition to its plant. Today an application for a permit to build a retort house, for the extension of the manufacture of water gas, was filed with Inspector Keyes, of the building department. The building is to be of brick and steel construction and is to be located close to the other retort houses of the company. It is to be 39 x 40 ft. of one story in height, and is estimated to cost $5,000.

Officials of the company stated the building is found necessary because of the extension of its business and the demands for service.

Richmond City Awards Contract for Installation of a High Pressure Main

The contract for furnishing the necessary 12-in. pipe and fittings for the installation of a high-pressure gas main in the principal residential section of the West End was awarded recently by the administrative board to the Glamorgan Pipe & Foundry Company, operators of the Richmond (Va.) City Gas Works. The pipe and fittings will cost approximately $17,727, and the total undertaking about $50,000.

Work on the high pressure main, which will extend from the West End holder to Sheppard and Broad Streets, with a branch in Davis Avenue, from Broad to Cary Street, will be started as quickly as possible in order that the supply of gas may be increased before the fall months, when consumption will materially increase.